

# Science and the Creative Arts



*by the same author*

THE ART OF THE POTTER

THE CERAMIC ART OF CHINA AND  
OTHER COUNTRIES OF THE FAR EAST

★

ENGLISH POTTERY AND PORCELAIN

GLASS

(GUIDE TO THE COLLECTION IN THE  
VICTORIA AND ALBERT MUSEUM)

★

THE SACRED FIRE:

AN ANTHOLOGY OF ENGLISH POEMS  
(THE BROADWAY BOOK OF ENGLISH VERSE)

★

GARDENING HERESIES AND DEVOTIONS

★

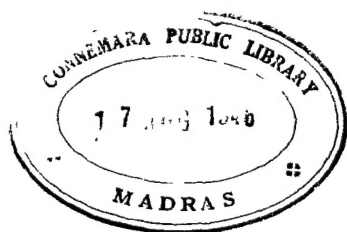
*by William Bowyer*

BROUGHT OUT IN EVIDENCE:

AN AUTOBIOGRAPHY

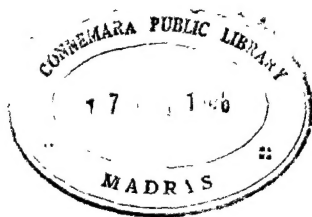
# SCIENCE AND THE CREATIVE ARTS

by  
W. B. HONEY



FABER & FABER LIMITED  
24 Russell Square  
London

*First published in Mcmxlv  
by Faber and Faber Limited  
24 Russell Square London W.C. 1  
Second impression January Mcmxlv  
Printed in Great Britain by  
R. MacLehose and Company Limited  
The University Press Glasgow  
All rights reserved*



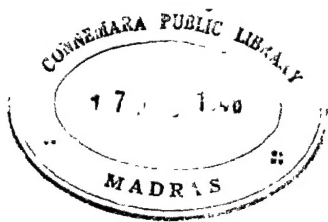
## Preface

**T**his essay is offered as a demonstration of the creative element in works of art, which is shown to be something that will always elude the analysis and measurement to which science by its method is committed. I hold that the faculty by which beauty is perceived belongs to the same non-rational part of the mind as that by which other judgements of value are made, and I have attempted also to show how important such judgements are in the theory of a society planned to reverse a natural *laissez faire*. The book is in fact a protest against the claim made by scientists and others to assess the value of a work of art by its immediate social usefulness or by its 'realism' or originality in some other aspect of its mere subject matter.

But while I contend that an incalculable quality of form is the essential element in a work of art, I have pointed out that this is not always directly or consciously sought by the artist, but often comes incidentally, in the course of an absorbing effort in some more reasonable or practical task. A work of art may need its rational occasion, though for its creative quality it depends on a gift of another order. A way is thus opened for a reconciliation between 'art for art's sake' and the belief that art must spring from urgent human concerns.

W. B. H.

To  
Herbert Read



## Contents

### I. THE PROBLEM STATED

*page 9*

### II. SCIENCE AND THE CREATIVE ARTS

*page 14*

### III. SCIENCE AND ETHICS

*page 53*

### IV. SCIENCE AND THE ARTS IN A NEW SOCIAL ORDER

*page 61*







## CHAPTER I

### The Problem Stated

A passionate belief in science is fast becoming a religion in Europe and the West. It holds some of the best minds of the day, and is gaining more and more popular acceptance. Only science, it is claimed, offers a faith that can give mankind a reasoned hope for the future. From a standpoint firmly based on observation of things as they are, their vision unobscured by superstition or wishful thinking, and looking forward to a world planned for the greater happiness, welfare, and, above all, more adventurous achievement of the whole race, men find in the promise of science a positive reason for living.

Finding the myths and dogmas of organised Christianity no longer acceptable, modern man still craves a purpose in the world, something he can serve, and in that state of mind he will accept any creed offered him that will give direction to his efforts, give them a meaning, however shallow or specious or reactionary it may be. Fascism and National Socialism were so accepted by large bodies of mankind.

Now it is the claim of scientists that they have a more hopeful solution to offer. To Dr. C. H. Waddington, whose admirable account of *The Scientific Attitude*\* is the occasion of this essay, science could even 'be a candidate for the position of super-ego', or 'irrationally accepted external authority' (for it is admitted that 'man may have an irrational belief in the value of reason'). Dr. Waddington goes so far indeed as to say that the 'very process of evolution whose direction determines science's ethical attitude' might be called by the name of God. Dr. Julian Huxley has expressed a similar faith in science as the means by which humanity may progress towards a possible evolutionary destiny; instead of blindly groping, the evolution of the race is now consciously directed by man as trustee. Pro-

\* Penguin Books, Ltd., London, 1941.

## The Problem Stated

fessor J. D. Bernal has written of the leading part the scientist must play in the future social order, while Professor J. B. S. Haldane in numerous essays has demonstrated the unlimited possibilities open to a human race fully instructed in the biological sciences.

This is an admirable faith as far as it goes. It is right that man's material welfare should be directed from a base of experimentally acquired and fully tested knowledge. It is right, for example, that food production should be in the hands of trained agricultural scientists; that housing should be controlled by men not obsessed by the 'styles' of the past but alive to the practical requirements and possibilities of life in the modern world; that public health and diet should be the concern of disinterested persons qualified to judge of the merits of remedies and prophylactics, beverages and foodstuffs. Roads and bridges, public transport, and the generation of power, should be directed on a rationally planned nation-wide system, unhampered by narrow interests. Even government itself should as far as possible be conducted on the basis of expert knowledge of social conditions and of human requirements and weaknesses. In every department of practical affairs, there is opportunity for the application of scientific planning, where now all is haphazard and at the mercy of prejudice and sectional interests.

These propositions will by many be thought self-evident, though they are far from being generally accepted or acted upon. They can hardly be questioned as far as they concern man's physical life and all the necessities of practical work and existence in a material world. But scientists are not content with the acceptance of their credentials in the sphere of material concerns only; they claim to be arbiters of truth in ethical and aesthetic judgements also. All truth and all values, they declare, must be proved and justified by the same scientific tests and method as those by which material laws are discovered. This claim proceeds of course inevitably from the basic scientific assumptions, from the monism to which science is committed by its analytical method and its belief in reality as a single causal system. As Dr. Waddington says, 'science is

## The Problem Stated

essentially an interest in causal relations' and shows a complete 'lack of interest in things for their own sakes.'

Now that philosophy I hold to be mistaken, for want of an adequate theory of knowledge. A wider view would admit the existence of other faculties besides reasoning power in what is vaguely called 'the mind', faculties by which things may be found to be of value for their own sake. And a demonstration of the error involved would show that irrational mental processes akin to those by which works of art are experienced are also required to discover and appraise the values, to reach the ethical as well as the aesthetic judgements to which science so often appeals in considering the evolutionary process, but never explains or justifies. The 'observed process of evolutionary advance', as it is ambiguously described, cannot in my view produce any of these values. Tolerance, fair-dealing, compassion, co-operative sympathy, unselfishness and other qualities, called without explanation 'spiritual', can never emerge as a result of the struggle for existence which the evolutionary process essentially is. Nor can they be derived from that sort of 'goodness' which, as Dr. Waddington defines it, 'means a high capacity for carrying out the functions proper to the creature'—in this case, man; since to decide whether the function is 'proper' an independent ethical judgement is required. Nor can the biologist or geneticist, dreaming of a new breed of men, arrive at any standard of moral excellence by reference to such a definition. Only by reference to an irrational, or super-rational, judgement of value can such a standard be reached. Science, we read, derives its ideas of what is valuable from its knowledge of the nature of things, and any criteria not found by reference to 'the whole line of human evolution' are dismissed as based on 'mysticism, nostalgia for the past, or motives of personal advantage.' But the mysticism (if the word must be used) can be shown to be as well based and as amply proved in experience, by those empirical tests to which science by definition always appeals, as the most matter-of-fact of physical and mathematical laws, though the proof may not be a rational one.

To secure the recognition of that non-rational faculty of the

## The Problem Stated

mind is of far-reaching importance to the individual and to society. A policy that would substitute the good of society for the interests of the individual might plausibly be justified by reference to the communism of ants and bees; though these we are told are in an evolutionary *cul-de-sac*—they do not 'progress'. A scientist, we read again, 'must agree that production within a society should be production for the society' and not for private profit, and this again might be justified on purely scientific grounds by an increased efficiency, a more perfect functioning of the social organism. But something more is needed to justify the idealism of mutual aid and brotherly love. The substitution of competition and the mutual struggle by co-operation, not in the limited self-interest of a tribe or race, but over larger and larger units, must in the last analysis be justified as something valuable for its own sake; and this, science will not admit. Efficiency and proper functioning are here not enough to explain something which the evolutionary process shows no sign of developing by itself. 'Free competition', wrote Engels, 'is the normal state of the animal kingdom,' and this has been the rule throughout the whole evolutionary process, so far as it can be observed: Species has preyed on species, in a universal mutual struggle, in which every organism, from the highest to the lowest, has sustained its life by consuming the tissues of some other creature, alive or dead. Man would now abolish this struggle, as far as his own race is concerned, by some form of socialism, and he will do so at the prompting of a judgement of value which does not proceed from reasoned argument at all, but which nevertheless has the force of a conviction. And it is not a capricious or merely personal notion; it finds support quite simply in the experience of a host of men who find certain things 'good'.

For the individual, as distinct from society, the matter is of even greater importance. Just as an intuition of goodness is needed to justify the collective liberation of individuals from the mutually competitive and predatory struggle, so intuitions of beauty and truth give a sense of the greatest values in personal experience; they too give a sense of liberation, but a

## The Problem Stated

liberation of what we call 'the spirit'. Education and its object, for which no better name than culture has yet been found, are concerned with the search for and establishment of these things which are their own justification, and may thus be regarded as the highest purpose of human activity, towards which all else is so much preparation and support. But this conclusion could never be drawn from any tendency shown by the evolutionary process. It is true that Dr. Huxley has remarked that 'with the rise of the mind to dominance various activities of the mind come to be pursued for their own sake, to have value in themselves . . . this is new, a property of man alone.' But how they 'come to be' so is not made at all clear. It is my contention that the sense of importance we associate with works of art, with poetry and music, as well as with all disinterested scientific enquiry and the service of humanity, proceeds from a non-rational faculty; and this may well be an organ by which we may penetrate to the truth of things more directly than in any other way.

## CHAPTER II

### Science and the Creative Arts

'Science', Dr. Waddington tells us, 'is the organised attempt of mankind to discover how things work as causal systems'; it is 'essentially analytical: anything subjected to its scrutiny must be isolated from the mush of general goings-on . . . it must be defined.' And it is clear that no other method is possible if we wish to discover, for example, what strain a steel girder will take; its molecular structure must be studied microscopically and its properties must be tested quantitatively; its behaviour must be known and predictable. Or again, if it is proposed to ascertain the effect of a drug or food on the body of an animal it is an essential preliminary to discover by dissection and comparison the pattern of its nervous and circulatory systems and the structure of the tissues that compose it. And even in the realm of 'pure' science, not applied to any human purpose, it is the supreme achievement of a physicist to analyse and rebuild into a new system those fundamental laws which enable him to predict a movement of the stars previously unnoticed, or to discover an order in what was previously thought to be disorder.

But all such analysis brings us no nearer to an understanding of the nature of the total reality in which these laws appear to be true. The laws when discovered give no answer to the question *why* they exist and *why* some things are thought to be more valuable than others. It may be argued that the reality has no other nature than that so revealed. But we know from our own experience that it includes more than this; we attach great importance (for example) to our conviction that certain things are good or beautiful. And that these convictions may be called 'emotional' or 'irrational', and may be shown to be derived from subjective states of mind, does not alter for us their existence as facts of experience.

## Science and the Creative Arts

/ Now it is especially in regard to works of art that the analytical method is felt to be inadequate or inappropriate. It is of course possible to analyse the intellectual content, or the physical structure, of the complex thing which we call a painting, a poem, or a piece of music. Its tendency may be discovered, its interpretation of events and phenomena in terms of human interests and social idealism. It is possible to isolate the elements of which it appears to be composed, to reduce it to a system of laws and impulses and material facts. But its essence as a work of creative art (a question-begging term perhaps) will always elude that analysis. To understand a work of art as such one must grasp it in its totality. It must be 'lived' as an experience is lived, simply and directly as a unity, as a system of relations organically one. In this integrating process we feel our whole mental being to be concentrated as if in action, directed 'forward'. We feel the object as a symbol is felt. We do not 'turn round and pull it to pieces'.

That phrase 'turn round . . .', and its implied opposite, a 'forward' movement, are perhaps after all something more than figures-of-speech. They do represent symbolically two distinguishable movements of the mind—the one coldly rational and analytical, the other creative and integrating. (I do not use the word 'synthesis' here, since it is only the counterpart of analysis and like it implies the possibility, which I am concerned to deny, of separating without destroying the parts of something that is organically one.)

We may take as examples illustrating the two approaches a drawing and a line of poetry. Analysing them we may abstract from each a number of causal systems by which we may 'explain' them. A drawing of a woman's body, by Matisse or Henri Gaudier, let us say, is to the psychologist the result of a check to the reproductive impulse whereby the desire of possession is sublimated and satisfied by representation. To the art-historian it is the latest stage in the evolution of European figure-drawing, in which the rendering of form by the pen or chalk line was advanced, or enriched, by the experiments of a hundred draughtsmen, by Michelangelo, Gian Battista Tiepolo, and many others, down to Ingres and Degas in the 19th

## Science and the Creative Arts

century; the influence of the calligraphic brush-writing and drawing of the Far East would be noted, but the different quality of the brush-line would be distinguished. The physicist, again, setting aside all non-physical pre-occupations, would find the drawing to be composed of paper and ink, and these in turn would be found to be composed of particles in a state of temporary equilibrium; further analysis would doubtless reveal the interaction of forces whose power could, at least in theory, be exactly measured. But to the connoisseur the drawing is none of these things; it is a living, created object of art, whose lines and the forms they enclose have a life of their own, whose structure has a unity and completeness and finality and (as he would say) a quality satisfying in itself. Its effect is immediate, simple and direct, not a matter of taking thought. Similarly a line of poetry (I refrain from quoting one at this point, for a reason which will appear presently) may be analysed into words and syllables whose length and stresses can by a convention be regarded as measurable quantities; its structure as a complex of these can be analysed and compared. The physicist could claim, again, that his system of jostling atoms or electrons or discharges of force alone reached finality'. And since words have meaning, a significance which by another convention is regarded as fixed and definite, a poem could be treated as so much information, or doctrine, or tendency, or expression of human sentiments, the 'truth' or genuineness of which could be decided by experimental tests or analysis, and whose origin in nature or in other minds could be traced and whose relation to the thought or expression of its time could be estimated. But the purely poetical qualities, however closely they may be associated with these analysable things, are not the same as those things, though some professed lovers of poetry may assert the contrary. The essential poetry resides in the enchantment, the fire, by which language may be transfigured to become a fabric of flaming 'jewels five words long.' In the case of music the possibility of analysis on the one hand, and the necessity on the other of a comprehending and sympathetic grasp of the work as a whole, are even more obvious.



## Science and the Creative Arts

To say that these two modes of understanding approach their object from different 'directions' is of course to speak in metaphor only. But that they are in a real sense opposed is clear from experience, from a consideration of the psychological states involved; tension is relaxed as we 'turn round' and analyse, while it is heightened as we concentrate or live creatively or by a kindred act 'feel' the purely aesthetic quality of a work of art.

Now it was the very important achievement of the French-Jewish philosopher Henri Bergson not only to define these two directions of the mind but to show in what manner and for what evolutionary purpose the analytical faculty came into existence. He showed how, in contact with material substance, with the *débris* of past creative activity, the intellect was formed as a faculty by means of which that 'dead' matter could be acted upon, and from it could be made 'useful' things, particularly in the form of extra-corporeal limbs called tools. Here alone that faculty could be 'at home'; to foretell approximately how matter would behave, to discover the laws that govern it, to isolate arbitrarily from it systems of cause-and-effect helpful for practical purposes—these were the functions of that mental faculty to which the name intellect (as distinct from mind) was given. Being thus limited in range and flexibility, the intellect could not admit such a thing as free creation or continuous growth or flow; the latter could only be represented mentally by a falsification, by a series of fixed views or points jerkily changing like the separate stills of a cinematograph film, while a creative act can for the intellect be only a rearrangement of material already given. To comprehend the reality behind the creative flux of things one must live *with* it, not 'turn back' and analyse the already-made, but move 'forward' like the glowing point of a rocket 'behind' which falls back into the darkness the *débris* of past creative activity.

By a similar process, admirably traced and described by Professor R. A. Wilson in his book *The Miraculous Birth of Language*, speech has come into existence as a means by which human beings may plan, discuss and communicate, and isolate

## Science and the Creative Arts

from the flux of things separate and manageable concepts previously embedded in the continuum of experience. But it is a mistake to claim, as he does, that this faculty of language gives more than a working approximation to truth; for it does no more than provide man with counters arbitrarily, almost impudently, alleged to correspond with the realities of experience. Actually, and on the contrary, they are all-too-labile to falsify by their fixity and hard outlines and imposed logic the fluid complexities of thought and feeling; more particularly they fail to render all that direct experience of reality made known to us by the far-reaching faculty of the mind which moves with the creative flow of things and to which Bergson gave the perhaps unfortunate name of intuition.

Words may indeed control and limit thought rather than express it. For example, the Latin languages with their much-praised precision are often claimed to be a better instrument of thought than many others. But this may mean no more than that they are crude. The claim may be a demonstration of their unfitness to express the finer shades of thought or feeling. They may give an illusory appearance of reality to non-existent fanciful abstractions or to distinctions that are arbitrary or ill-founded, which other languages are nevertheless blamed for ignoring. Thus the Chinese language is accused of paucity and imprecision because it has only one word for both 'heart' and 'mind'. But it is presumptuous to assume that these words correspond to realities as distinct and authentic as they appear to be in the context of an English sentence. To affirm that they do so correspond is to err as grievously as the Spanish peasant who told the traveller that he couldn't help knowing Spanish, if he knew that a kettle was a kettle, and everyone knew that. Even the grammar of a language may give the illusion of an inevitable logic, yet fail altogether to convey that order of truth which symbols alone may express.

A dilemma is of course presented; intuitive knowledge and a sense of the flux of things bring also a sense of hopeless incommunicability and of the falsification of words. One remembers the dictum of the Chinese philosopher who said 'He who says, does not know; he who knows, cannot say.'

## Science and the Creative Arts

To doubt in this way the ultimate value of analytical thinking and articulate language and their logic, or to question the trustworthiness of their apparatus, is apt to be regarded by the scientific philosopher with something like horror. If reality is beyond articulate expression and reasoned argument, there is nothing for the philosopher to do. Nothing can be discussed. His occupation has gone and there was nothing like leather. Especially does he dread the disturbance of a world conceived as conforming to a single type of law. Thus Dr. Waddington admits that 'freedom is a very troublesome concept for the scientist to discuss, partly because he is not convinced that, in the last analysis, there is such a thing. Science works by discovering causes, and it finds difficulty in admitting that there is a free will, or desire, and impulses which have no underlying cause. . . .' For the scientist it is obligatory to adopt the view that all human actions and achievements are produced, and in theory fully accounted for, by causes, and 'the only things there are which can possibly act as causes are the material facts. If one rejects that, one rejects the whole causal concept in relation to psychology and reduces it to a completely arbitrary subject which has no relation to the rest of nature.' So strong is the fear of any other sort of order that Dr. Julian Huxley, 'forgetting all the implications of determinism, can speak of 'the *hopefulness* [my italics] of natural causation as a substitute for the illogical vagaries of supernaturalism and incommunicability.' It is perhaps at first sight not obvious that this belief in causes, and its consequent disbelief in free creation, might be due to unsuitable or imperfect mental apparatus, or that belief in a world of universal causality is after all an arbitrary one, a dogma, unproved save in regard to small isolated parts of existence. It should be remembered too that to isolate an object 'from the mush of general goings-on' might well be a violent misrepresentation of the continuous nature of things. But it is easy to understand the fear and discomfort with which the alternative is regarded; the way must seem to be opened for every kind of superstition and *ipse dixit*. Hitler relied upon his 'intuitions', and it is Dr. Waddington's view that the Nazi philosophy proposed that

## Science and the Creative Arts

man should give up his reasoning faculty altogether, and 'become once more a barbarian at the mercy of his feelings and irrational desires.' In all this we may perhaps detect a little of the (dare one say?) scientific arrogance, counterpart to the theologian's arrogant assumption that one who rejects the dogmas of his church is necessarily a base self-seeking materialist. It is assumed that rejection of the dogma of universal causality means a wicked and irresponsible plunge into a sea of superstitious fancies, such as astrology and the casting of horoscopes. But it is not really as bad as that. For the scientific attitude is appropriate even here. Dr. Waddington's own criterion, his 'crucial test', by which in the last analysis every statement or opinion is to be accepted or rejected, applies here too. The test, for science, is 'whether a thing is true when accepted in practice.' As he puts it elsewhere, 'scientific habits of thought dictate a search for unbiassed evidence and the checking of theory by practice.' Intuitive knowledge, then, like all other supposed facts of experience and the theories put forward to explain them, must be put to the test of practice.

But what meaning are we to attach to 'true' in this connection? In neither of the two fields which concern us here—the field of the arts and that of ethical values—is it possible to provide a logical demonstration of the rightness of one's belief. It is impossible to prove that one thing is beautiful and another aesthetically null and lifeless; or that compassion is better than aggression. Only what might well be called a pragmatic demonstration is possible; the Christian ethics would be called 'true' not because they are of proved value to the race in the evolutionary process, or correspond with an evolutionary tendency, or even because one individual has felt, however passionately, that they are 'good'; but because a great many men, in spite of persecution, in past centuries as well as at the present time, men whom we recognise as sensitive, disinterested, of spiritual insight, and intellectually honest, have declared them to be 'true' and of value as ends in themselves. In this way even tradition, which is so readily misrepresented as a dead hand from the past, may be no less than accumulated empirical knowledge; a traditional belief is

## Science and the Creative Arts

proved 'true' because it has *worked* in practice for many generations of men. Similarly the essential values of works of art are attested by a consensus of informed and sensitive opinion, which will be found to be remarkably unanimous even where the most adventurous modern work is concerned, though squabbles naturally get more publicity. (This is not, of course, a majority judgement; it is quite the contrary, since the spiritually gifted persons are in fact rare.)

A belief, then, in free creation in the arts and in the beauty which is their distinguishing mark, as something valuable in itself, rests on an intuition merely affirmed, but supported by the judgement of that consensus of informed and sensitive opinion to which I have referred. The affirmations and discoveries of artists and mystics may thus have the force of super-rational testimony regarding the nature of things, of what is called reality, expressed (if it is to be expressed at all) in language and patterns which we must call symbolical. And such evidence is as worthy of respect in its particular realm as the arguments of a reasoning faculty which is unable to explain the genesis and authority of the values to which it nevertheless constantly refers and whose field is demonstrably not that of the living and growing and (as I have called it) the creative.

★

★

★

But since every work of art, as I have pointed out, may be regarded from both points of view, by both parts of the mind, it has a two-fold existence, and may have had a two-fold origin. Besides that aspect in which it is a freely created, useless, and beautiful object, it may also be regarded as having been made for a practical purpose. This introduces a complication, since its maker may have had in view this or some other purpose quite irrelevant to its ultimate aesthetic value. And it is undoubtedly the case that artists have seldom been fully conscious of that ultimate aesthetic value. By a paradox of which I shall presently attempt an explanation such a consciousness is in fact a handicap to them; they seem most free to create when concentrating upon some other problem, such as representation, or construction, or the investigation of a new technique, or the

## Science and the Creative Arts

mere expression of ideas, or the preaching of a gospel. This will be made clear by a brief consideration of several arts to which I shall now proceed.

Architecture provides an obvious case of the two aspects in question. A practical task is almost always the *occasion* of such art as a building possesses, and the performance of this task with efficiency, grace and style might well be claimed as the whole art of the affair. This is apt to be borne out by all that architecture which is a matter of 'styles' rather than style: the art is supposed to be no more than a dress assumed more or less in disregard of the practical task of providing a fit and soundly constructed habitation. Sir Henry Wotton laid it down that the art of 'well-building' consisted of three elements: Firmness, Commodity, and Delight, and for the architect to seek the Delight for its own sake as his primary consideration usually results, through the paradox I have mentioned, in a lifeless *pastiche* or the empty display of what it is tempting to call *dilettantisme*. The most satisfying results are found to proceed from Delight in the achievement of Firmness and Commodity.

Thus what is called 'design' in a building has several meanings. It means in the first place the suitability of its planning for the practical purposes it is to serve, and this must be a rational thing, contrived to solve its problem in a scientific way, though this does not necessarily imply a disregard of solutions worked out in the past and handed down by tradition. Rational too must be its construction, the mechanics of its assembling to be Firm as well as Commodious. But rational design and construction in these functional senses are not enough by themselves to produce a work of art. That sense of style in contriving harmony and rhythm in proportions and contrast in colour and texture, and in the management of lights and shadows, voids and solids—not necessarily in a traditional way, but adventurously—constitutes the art of the architect, whether he calls himself artist or engineer.

It is sometimes contended by critics of the functionalist school that the 'modern' architecture which aims solely at mechanical efficiency and discards ornament is therefore without 'period mannerism' and achieves a timeless quality of

## Science and the Creative Arts

perfection. But this is a fallacy. Though such work appears to be 'pared down to essentials' it is a mistake to suppose it to be without a 'period' character, as well as a personal character, due to a preference for certain types of curve and proportion and repetition. And some of its functionalism may be more apparent than real. It is, for example, hard to avoid a suspicion that the balconies nowadays invariably included in the design of modern flats are there as much to provide shadow and incident in an otherwise featureless elevation as for any utilitarian purpose, since they are never used. The 'period mannerism' may indeed be regarded as the idiom in which the architect expresses his creative vision, while the mechanics of his building is its grammar, and its purpose or function its intellectual content; it is 'what he has to say.' Now the art of a building is no one of these things, yet it cannot exist without them; and a factory designed by Frank Lloyd Wright, a concrete bridge by Robert Maillart or a District Railway Station by Charles Holden are all as authentically architecture, and period architecture, as a Greek temple, or St. Peter's, Rome, or a Persian mosque of brick and tile, or a London church by Sir Christopher Wren. All have their period mannerism, their period idiom, but their architectural virtue does not lie in that, though the purveyor of 'styles' may seem to think otherwise. An idiom may be favourable to free creation, as in the case of the steel and concrete and glass and other exciting new media of the present day; or unfavourable, as in the extended Renaissance period, with its insistence on ornament for display. But given creative genius the architect in each period may have achieved merit in his own way.

This art, then, this delightful play and invention, this adventurous taste in mass and proportion and the plotting of curves, is the irrational creative element in architecture; and all who are sensitive to it will insist that it is the essential part.

I have taken architecture first of all, since its two-fold character is so obvious. It is also typical of other arts, in the sense that sculpture and terra-cotta and many sorts of metal-work and woodwork and weaving have been fostered by the

## Science and the Creative Arts

art of building and obey the same laws; it has therefore been called 'the mother of the arts'. But for the harmony of parts it presents it has also been described as 'frozen music', and the phrase with its implication of a kind of abstract beauty common to both is apt enough. For music does indeed provide the most illuminating example.

It was well said by Walter Pater that all arts aspire to the condition of music, in which form and content are inseparable. In other words there is no distinguishable content in a piece of absolute music. Only by what is felt to be a descent, a degrading, does music become the expression of merely human sentiments, an affair of articulate meaning or aspiration or pictorial intention. Those listeners who declare that they 'see things' in music or 'read meanings' into it, stand instantly accused of an imperfect understanding of its true nature, while songs and operas are generally (but not, I admit, universally) felt to be of a lower order, actually because of their human interest and more or less articulate verbal expression. In this way music reverses the condition of those other arts in which abstract beauty is the last quality to be recognised; and thus it cannot for the most part be justified on account of its usefulness or any practical intention. Even its stimulating power is vaguely directed and not necessarily advantageous to the human creature taking part in a performance or listening to it; and it cannot be said to have an indisputable social value susceptible of scientific direction. Its value is plainly a mystical one, irrational alike in its origin and its appeal. It is true that great music has been composed apparently under the stimulus of particular human, especially religious, emotions, and even of a 'programme', and it may sometimes be an advantage to the composer to have some such external stimulus. But as so often happens in the arts the ultimate value is independent of the cause or occasion that brought it into existence. It is also true that musical compositions are susceptible of analysis. Their structure may be explained, the origin of themes may be traced, their harmonic basis may be shown to be due to physical laws which govern the response of the human ear to tones and overtones. But none of these things is, I believe, ever seriously held



## Science and the Creative Arts

to be of the essence of the music. The statement I remember once hearing, that the whole art of Beethoven proceeded from 'a discovery of the consonance of the triad', and 'that all music has always pre-existed in the properties of numbers', as the late Dr. C. W. Saleeby once said in a sermon, are assertions immediately recognised as absurd. The actual musical essence of such a work as (for example) William Byrd's *Mass for five voices* cannot be accounted for either by the inspiration of religion or ritual or by the requirements of five-part polyphony: its exultant heights with their blazing light and its awe-inspiring depths, its profoundly moving counterpoint, are living created conjunctions of sound, conditioned no doubt but not determined by physical laws. Again, to take a lesser but still significant example, it may be remarked that in the *Evocación* prefaced to his *Iberia*, Albeniz has set in contrast a *jota* of Navarre and an Andalusian melody; but this interesting fact is not enough to account for its power to impress and haunt the mind; it is at most a description, not an explanation. Debussy wrote what he called a *Prélude* to Mallarmé's *L'Après-Midi d'un Faune*, which may be said to have been 'inspired' by it; and it is, like the poem, unmistakably Latin, southern and sensuous rather than intellectual; but nothing of this explains the character of its miraculously sensitive and flexible unbroken melodic line and its fluid dissolving harmonies with their alternations of ecstasy and calm, now fragile and tremulous, now flowing full and sonorous. Nor is there anything rational in its form, whose 'perfection', as we call it, obeys no rules but is entirely satisfying and beautiful. It is so with all other fine music. Much of Stravinsky's *Petrouchka* is, superficially considered, a tissue merely of strangely orchestrated Russian folk-tunes. Actually it pulsates with a complex of rhythms and far-fetched harmonies that might be those of creation itself. In all, the music proper, as distinct from its occasions and apparatus, belongs to an irrational world of useless fantasy, without articulate meaning, social purpose, or external justification. It is of value for its own sake alone.

It might appear to be otherwise with the arts of painting and drawing. Here representation of some kind has seemed inevit-

## Science and the Creative Arts

able and has usually been preliminary to the use of the images made in story-telling or religious teaching. The popular conception of painting has always assumed the value, as an end in itself, of a 'lifelike' rendering of the appearance of things; while more literary and cultivated taste has required the application of such skill to record or illustrate something—a scene or an idea or a 'poetic subject'—having a physical or moral beauty of its own which it was the painter's task merely to display with sufficient skill and 'imagination'. Even 'decoration' came to be considered a lower aim; the birth of Venetian painting could be described as the infusing into the lifeless mosaic of 'a little more of human expression'. The scientist here has his inevitable criteria; he judges by the illustrational content of the work, by its documentary value and social significance, by the information conveyed by it; if he admits 'imagination' at all he means by the word nothing more than the illustration of some exceptional, fantastic or dream-like human experience, expressed in terms of human emotion. He never means that sort of invention in terms of a material which is peculiar to creative work in any art.

Only in modern times has criticism become fully aware of the painter's own special contribution and how essential it is; how a painting has its own inspired creative language of form and how it must be decorative, not in the sense of a merely eye-pleasing charm or prettiness, but in the sense of a rhythmically composed pattern of form and colour. To be of value as a work of art it must itself be a beautifully made thing, a composition that is adventurous, imaginative in terms of paint and canvas, lines and tones, all with a life of their own, created and organised, and given meaning by a bounding line or frame; while its relation to nature, whether it is 'copied' or 'distorted', is entirely an affair of the painter's vision. Some alteration of natural form is in fact by definition inevitable.

But it is far from being true that artists in general have valued their own work for these essential qualities, and it is perhaps as well that it has been so. The commonest of their claims has referred to a 'return to nature': the most gifted painters, rejecting the conventions into which the discoveries

## Science and the Creative Arts

of their elders had lapsed and searching for vividness and 'truth', have claimed anew as the important thing in their work their fidelity to nature; they have reasserted their right to paint all sorts of subjects, 'including 'ugly' ones, or they have made battle-cries of such inessential technical matters as their novel and more exact rendering of lights and shadows or their treatment of perspective. To nature as the source of all visual experience they have attributed their inspiration. 'Go to nature in all singleness of heart', wrote Ruskin in a peculiarly false and unctuous but characteristic passage, 'and walk with her laboriously and trustingly, having no other thought but how best to penetrate her meaning, and remember her instruction, rejecting nothing, selecting nothing and scorning nothing, believing all things to be right and good, and rejoicing always in the truth.' Even Paul Cézanne, father of one of the most vital modern movements in painting, professed a similar creed. No work of art could ever result merely from such application and devotion as this implies. But it seems that by the paradox I have already mentioned it is by such intense and excited preoccupation with the inessential that the painter's gifts have been set free to create, almost unconsciously, works of art which vary in merit according to their authors' gifts as artists and not according to their fidelity to nature or some other object of their professed striving.

But too direct a consciousness of this absolute beauty may be harmful to both artist and observer. Modern criticism having pointed out the essential quality, some modern painters have proceeded to the conclusion that the 'abstract' pictorial beauty in question could be achieved directly in a composition attempting no representation and having no other non-pictorial 'meaning'. But such movements have proved dangerously self-conscious and sterile; since by the paradox mentioned it seems that the art of painting actually requires a vehicle, as it were, some inessential task, in the performance of which the creative gift is liberated. That task may be representation, of a new and more vivid kind, a revolutionary technique, or the exploration of the subconscious as in surrealism, or even story-telling. But none of these devotions will make a

## Science and the Creative Arts

painter great, or do more than provide him with an occasion for the use of whatever talent he has.

Now this formal essence in painting, standing apart from illustration or representational content, is again something which science finds it hard to admit. It is an irrational element, playing no part in the evolution of the race; and being of value for its own sake, it contributes nothing directly to the welfare of society. Dr. Waddington while applauding the modern artists who are 'busy liquidating the outworn traditions' complains that they have not 'formulated at all clearly' the new culture or society 'that is to come'. The duty of artists, it appears, 'their main function', is 'to arrive at a point of view . . . positive and definite enough to be worth considering as a basis for a new society.' 'The only part of their work which seems constructive and progressive', he writes elsewhere, 'is derived, unconsciously and tortuously it may be, from the scientific attitude.' Thus Ben Nicholson and Piet Mondrian are praised for the elegance with which their problems are solved; 'the desired effect is exactly achieved with the minimum of fuss.' But what are the problems that are set or the effects it is desired to produce? How are they related to scientific progress, to that form of art which according to Dr. Huxley 'could and should be a social function, giving our society a consciousness of its nature and its possibilities'? The values of these as of all other works of art surely belong rather to that irrational and useless beauty which scientific monism is always at a loss to explain. The 'clean precision' referred to owes nothing and contributes nothing to science or society; it is only one of the contemporary idioms in which artists create something that is of no social value whatever.

The nature of the beauty achieved by the art of the painter is (I must insist again) beyond rational explanation and analysis, though it is not surprising that attempts have been made to analyse and define it; critics whose occupation it is to write about art will never admit that its quality is inexpressible and unaccountable. But the 'spatial relations' proposed as a description by Roger Fry really defines nothing, since the relations might be recognisable but still entirely obvious, empty and

## Science and the Creative Arts

insignificant. Nor does it take one any nearer an explanation of the essential value to describe the types of design in painting and drawing with Wölfflin as 'open' or 'closed', or to analyse Cézanne's works with his American commentators to discover that 'the horizontal-oblique central plane supports the most positive rhythms of the entire space-composition and seems levitated above the lower vertical plane . . .' and so on. Such writing in my opinion is not only irrelevant but even objectionable, in that while finally explaining nothing it induces a dangerous familiarity with what should remain a sacred mystery. It is almost better to confine criticism to the 'subject' of the painting, though that is irrelevant. For the critic must write about something, and he is perhaps best employed in a region remote from the essential painting's vital parts.

Sculpture is even more apt than painting to be popularly regarded as an art whose essence is representation, the 'life-like' rendering of natural forms. Even the convention of painting, which depicts solid objects on a flat surface, is not required in the case of sculpture, and the way is opened for the popular misconception by which the mere depiction of subjects deemed in advance to be beautiful, or illustrating beautiful or inspiring sentiments or ideas or allegories, is thought to be its sole and highest achievement. Actually, its quality of abstract beauty, of planes and contours in a certain relation, is of the most recondite order, requiring the rarest of gifts for its full appreciation. The modern sculptor's dilemma resembles the painter's in that he has become conscious of the possibilities of abstract beauty in his work and is tempted to approach it directly. But here too the *cul-de-sac* may be avoided by a passionate interest in natural forms, an excited visual experience, even though it results in work in no way naturalistic. In the stone-carvings of such a sculptor as Henry Moore, a passionate interest in natural form results in abstractions of a most impressive kind, produced it might be said by a sustained 'analysis' of forms. But this is a remarkable illustration of the confusion brought by words; for the 'analysis' in question is a simplifying and visionary elimination, in the creation of forms with a life of their own.

## Science and the Creative Arts

Sculpture with its three-dimensioned forms becomes the type of many so-called industrial arts; pottery and glass and some branches of metalwork and woodwork share its character, though each material has its own special range of potentialities. Here especially the two-fold nature of works of art is apparent. As in architecture, Firmness, Commodity and Delight govern the artist-craftsman's intention, and the functionalist fallacy is tempting but easily disproved. The medieval potter produced a jug that was as soundly made as his empirical knowledge allowed. It was made to sit firmly on its base, to be dipped conveniently and pour well, and as overplus showed as if with a half-conscious gesture of craftsmanlike pride a strongly and beautifully curved handle, admirably attached by a masterly thumbing-down, as well as a sensitively proportioned profile, dynamically bulging or gracefully tapering upwards. Seen in a museum or copied by a studio-potter such jugs may take the rank of abstract sculpture, though never so conceived. The modern industrialist potter may aim at a more scientific efficiency in materials and working shapes, but cannot by any analysis arrive at the same or a kindred beauty of form; that beauty can only come from an original creative gift in the designer, and it will show a period mannerism no less than the other. The modern style in such work has been well described by Herbert Read as showing Economy, Precision and Simplicity, but the qualities implied by these words do not determine anything; they are descriptive merely of some of its characteristics. For all its air of being 'basic', 'absolute' and 'inevitable', it is not scientifically determined, but irrationally creative.

The distinction between purpose and occasion on the one hand, and positive artistic achievement on the other, in a work of industrial art, is well illustrated by much that is produced with a commercial intention. Here one of the purposes of the artist, rationally and deliberately conceived, is to make the goods sell, and success in this can be tested statistically. Commercial printing and packaging, posters and the layout of advertisements, shop-fronts and window-dressing, are all chiefly concerned with the promotion of trade; but their

## Science and the Creative Arts

efficient performance of this function is by no means the only kind of success they achieve. A poster advertising Bovril and one by E. McKnight Kauffer may have equal success in selling the goods, but for the judgement that is concerned with creative qualities there can be no comparison. The one may be banal, lifeless, facetious and devoid of every quality found in works of art, while the other may be an original and profoundly disturbing and delightful invention. So too with much other modern commercial work. It is vital and creative, enlisting the services of the most original artists of the day, though ministering also to a predatory commercial activity. The making of glass bottles and containers for drugs, cosmetics, conserves, and the like, though primarily concerned with selling, is the occasion of much austere and admirable design. The printing and decoration of books, most vital of all the modern arts, aims more deliberately at the beautiful, but even this is again occupied also with the practical problems of legibility and fitness. Women's dress provides still another example. Its purpose is obviously sex-appeal, but it is also the occasion of endless ingenuity in design, some of which must rank as creative art. In none of these instances can the final achievement I have called creative be explained as rational or scientific, though in its origin it may have had a purpose of that order. That final achievement rests on the element of delighted play and discovery, giving satisfaction to a sense that has nothing to do with the reasoning faculty or its application in science or intelligible purposes.

It may be argued at this point that the quality common to all these works of visual art, which we are apt to call by the name of beauty, is in fact derived from sex-appeal, many varieties of which are called by the same name, and so is to be linked with the evolutionary process. But even if this derivation could be finally demonstrated (and it is my own belief that it could not, since the understanding of a work of art is an act of disinterested contemplation, which sex never brings), yet the special character of such 'beauty' would still remain undetermined. That it is occasioned by sexual selection would be admitted, but that particular forms were preferred rather than others

## Science and the Creative Arts

would still remain unexplained, as a matter of irrational choice. For example: it is obvious that 'beautiful' eyes and 'beautiful' breasts are a means of sexual attraction; it may be admitted too that our delight in the shape and colour of other animals, and even of plants, is in some way related to this attraction; but the particular colour and form of eyes and eyelashes, and the particular contour of breasts and the particular shape and colouring of lily and panda and sea-urchin so preferred or admired are not in any way determined by that fact. Though the problem is a stage farther removed the mystery remains: the design of beautiful things in nature is always creative, and, like its recognition, remains an irrational preference.

The attempt to claim the modern poets as architects of a new and scientifically ordered society is perhaps more plausible than that concerning the visual arts. Poets use words which have meaning, and human ideals and aspirations have frequently induced them to write. And if the intellectual and human element in their verses were the sole or even the chief merit in their work it might well be argued that it could and should have a social purpose. But here again the most sensitive opinion holds that the greatest poetic merit arises not directly from the quality of the poet's thought, or from a peculiar sort of feeling expressed in it, but from the enchantment wrought by words and by what may for the moment be called imagery. This, I am aware, is not a universally accepted view, nor is it the popular one. But it is the only account of the matter which explains why poetry whose occasion no longer interests us, whose thought is obsolete, may still affect us profoundly.

Of the nature of this essential poetry it is perhaps presumptuous to speak with assurance. But a few affirmations may be permitted. In the first place, it is not a mere command of the metrical use of words; if it were, then Swinburne's paper flames would be the highest sort of poetry. Nor is it a power of arranging a pattern of words without regard to intelligible meaning; if it were that, the nonsense rhymes of Lewis Carroll might be pure poetry of a high order. Sound plays a part, nevertheless, in a pattern whose elements include also ideas



## Science and the Creative Arts

and associations and their mental reverberations. These are used as a painter uses tones, not in a logical sequence or structure, but in the pattern of an incantation in which words take on a new life in their poetical context and come alight unaccountably. Words otherwise ordinary and unevocative for a moment catch as it would seem a reflection from some hidden fire. Here again, as in painting, it is not prettiness, not a sensuous pleasing of the ear, that is the primary effect; the element of strangeness, the unexpected surprising word, is always present, and is comparable with the painter's significant simplification and 'distortion'. A beautiful poem may in this way be composed wholly of elements in themselves 'ugly' or disagreeable. Above all, this essential poetry is creative; it is the result of spiritual adventure and discovery, not the mere reporting of material fact or argument about it, or the 'imaginative' description of fanciful happenings. It is the creation of symbols momentarily charged with an inarticulate and super-rational meaning. Yet for all its dreamlike wildness, its divine madness, we are moved to speak of the 'rightness' of its utterances; we call them 'inevitable' and 'perfect'—words which convey no exact meaning but express our profound satisfaction at the enlightenment we are given. And this claim holds true alike of the poetry called serious, springing from the deeper concerns of the human race, and of that called trivial.

Illustrations could of course be found in a hundred passages chosen from the whole range of English poetry; but it will be well to take them chiefly from modern poetry; this alone is likely to have the greatest urgency and vividness. Thus from T. S. Eliot's *Ash Wednesday*, these lines may be taken—

*Here are the years that walk between, bearing  
Away the fiddles and the flutes, restoring  
One who moves in the time between sleep and waking, wearing  
White light folded, sheathed about her, folded.  
The new years walk, restoring  
Through a bright cloud of tears, the years, restoring  
With a new verse the ancient rhyme. Redeem  
The time. Redeem*

## Science and the Creative Arts

*The unread vision in the higher dream*

*While jewelled unicorns draw by the gilded hearse.*

A great beauty of rhythm and sound and 'word-colour' are here united, as in a sort of counterpoint, with a pattern of associations and abstract imagery, some of it in phrases doubtless appropriated, as seems to be the author's custom, from the most unexpected sources. The lines have no 'meaning' save the mood of penitence and resignation which pervades the whole poem. The same qualities are to be found in the harsh ironical *collage* of *Triumphal March*, and in the tranquil harmonies of *Marina*, which breaks momentarily, with an astonishing 'rightness' of form, into the discords of

*The garboard strake leaks, the seams need caulking*

before returning to the white serenity of

*This form, this face, this life*

*Living to live in a world of time beyond me; let me*

*Resign my life for this life, my speech for that unspoken,*

*The awakened, lips parted, the hope, the new ships.*

Whatever private sequence of thought may have been used in composing this, there is in the result, for the reader, no logical or scientific argument or coherent description—only the form and texture proper to poetry.

Many instances of this essential poetry are to be found in the remarkable late flowering of the art of W. B. Yeats. I will quote one line—

*That dolphin-torn that gong-tormented sea*

which occurs in a poem called *Byzantium*, ostensibly a description of the mosaics in a Byzantine church. (And academic critics of the future will no doubt discuss its relation to those in Istanbul) But it gives no rational account or picture of them, and is itself an independent self-sufficient created thing, menacing and terrible.

The miracle may be worked with the most unpromising material. Those who are apt to mistake the apparatus of poetry for its true substance may be repelled by the conventional and

## Science and the Creative Arts

now faded and unfashionable personifications of the Eighteenth Century, and so miss the essential poetry in many passages of William Collins, with their etherial overtones, as in his *Ode to Evening*—

*For when thy folding star arising shews  
His pale Circlet, at his warning Lamp  
The fragrant Hours, and Elves  
Who slept in Buds the Day,  
And many a Nymph who wreaths her Brows with Sedge,  
And sheds the fresh'ning Dew, and lovelier still,  
The Pensive Pleasures sweet  
Prepare thy shadowy Car.*

*Or if chill blust'ring Winds, or driving Rain,  
Prevent my willing Feet, be mine the Hut,  
That from the Mountain's side,  
Views Wilds, and swelling Floods,  
And Hamlets brown, and dim-discover'd Spires,  
And hears their simple Bell, and marks o'er all,  
Thy Dewy Fingers draw  
The gradual dusky Veil.*

'The same far-fetched music that sounds here can be heard also in the perhaps-too-familiar lines which begin—

*How sleep the Brave, who sink to Rest  
By all their Country's Wishes blest!*

and in the following:

*To fair Fidele's grassy tomb  
Soft maids and village hinds shall bring  
Each op'ning sweet, of earliest bloom,  
And rifle all the breathing Spring.*

It is as though the poet were himself haunted by a strain of 'music' which he constantly strove to write down, in words 'meaning' something different each time, but always making the same inarticulate poetry, of sounds and syllables, images and associations, making up what I have called elsewhere the

## Science and the Creative Arts

parallel or unwritten poem. And such music becomes unmistakably personal to him. Thus we meet the same strains constantly in Matthew Arnold, sometimes as the expression of deep human feeling, as in—

*The unplumb'd, salt, estranging sea.*

but equally audible in the more impersonal emotion of that most miraculous poem *The Strayed Reveller*—

*On the broad clay-laden*

*Lone Chorasmian stream . . .*

in lines whose associations mean nothing at all to most of us.

This personal quality and 'music' is no mannerism, no mere trick of words or metre, but the very essence of the poet's art. Thus Herbert Read, in poems written on widely different themes, again and again evokes an enchantment that obviously proceeds from the same dark fire—

*Leave Helen to her lover. Draw away  
before the sea is dark. Frighten with your oars  
the white sea-birds till they rise  
on wings that veer  
against the black sentinels  
of the silent wood.*

★ ★ ★

*Haulms burn  
in distant fields.  
Reluctantly the plumes of smoke  
rise against a haze  
of hills blue and clear  
but featureless.*

★ ★ ★

*For a haunt seek a coign  
in a rocky land;  
when the night is black  
settle on the bleak headlands.*

There is this recognisable personal quality in the work of all

## Science and the Creative Arts

true poets; having heard the music they have sought words in which to give it form and utterance—

*There like a Bird, it sits and sings,  
Then whets and combs its silver Wings,  
And, till prepar'd for longer flight,  
Waves in its Plumes the various Light.*

★

★

★

*Thy Beauty shall no more be found,  
Nor in thy marble Vault shall sound  
My echoing song*

It is unmistakably the voice of the young Andrew Marvell with its grave oboe music.

*Or do you think they more than once can die  
Whom you deny?  
Who tell you of a thousand Deaths a Day,  
Like the old Poets feign,  
And tell the pain  
They met, but in the common way.*

It is the voice of Marvell's contemporary, Sir John Suckling—mocking, tender, scornful, but with the same sensitive beauty of utterance.

Not less personal are the voices of other modern poets, as in this of Walter de la Mare—

*The most delighting string's  
Sweet jargonings,  
The happiest throat's  
Most easeful, lovely notes  
Fall back into a veiling silentness.*

Or this, again—

*Not any flower that blows  
But shining watch doth keep;  
Every swift changing chequered hour it knows  
Now to break forth in beauty; now to sleep.*

It is the same musical enchantment, whether embodied in a

## Science and the Creative Arts

record of things seen or heard, or in a statement of imaginative experience.

In A. E. Housman (to take an unfashionable example) the accents, trembling but resolute, are those of bitter anguish, the cry of an exceptionally sensitive mind—

*Bring, in this timeless grave to throw,  
No cypress, sombre on the snow;  
Snap not from the bitter yew  
His leaves that live December through;*

The words, the sentiment, may be ordinary, 'commonplace', but the music is of the utmost fineness and rarity. It sounds again and again unmistakably, now high and clear, now low and murmuring like the sound of distant bells, but always recognisably the same haunting music.

The Romantic poets often aimed deliberately at a magical effect. Thus Coleridge in *Christabel* plays with words as if on a musical instrument, using every resource in the way of flatness and broken rhythms to produce an impression of wild fantasy and derangement—

*Is the night chilly and dark?  
The night is chilly but not dark.  
The thin gray cloud is spread on high,  
It covers but not hides the sky.  
The moon is behind, and at the full;  
And yet she looks both small and dull.  
The night is chill, the cloud is gray:  
'Tis a month before the month of May,  
And the Spring comes slowly up this way.*

★

★

★

*The night is chill; the forest bare;  
Is it the wind that moaneth bleak?  
There is not wind enough in the air  
To move away the ringlet curl  
From the lovely lady's cheek—  
There is not wind enough to twirl  
The one red leaf, the last of its clan,*

## Science and the Creative Arts

*That dances as often as dance it can,  
Hanging so light, and hanging so high,  
On the topmost twig that looks up at the sky.*

Here, and in practically the whole of *Christabel*, is the authentic incantation, with all its dream-like inconsequence. It is a poem whose merit does not lie in its 'story', though that might be termed imaginative in the ordinary sense; for this in other hands might have been utterly commonplace and not poetry at all. Its merit lies in its amazing texture, in the quality of its writing.

A very different order of music sounds in the work of such an 'artificial' poet as Alexander Pope, where the beauty is no less moving for its lack of what in romantic criticism is called poetic feeling. The pattern of words is everything, and it is in fact from a quality of deliberately contrived elegance and hard colourful precision that the poetry is derived. There may be a thrill in even a single line, such as—

*And the nice conduct of a clouded cane.*

While a whole concert sounds in *The Rape of the Lock* and its like—

*Here Files of Pins extend their shining Rows,  
Puffs, Powders, Patches, Bibles, Billets-doux.  
Now awful Beauty puts on all its Arms;  
The Fair each moment rises in her Charms,  
Repairs her Smiles, awakens ev'ry Grace,  
And calls forth all the Wonders of her Face;  
Sees by Degrees a purer Blush arise,  
And keener Lightnings quicken in her Eyes.*

The same thrill of delighted surprise marks much else that might be called trivial but is none the less poetry—

*There's not a roaring blade in all this town  
Can go so far towards hell for half a crown  
As I for sixpence. For I know the way.*

Lastly, among these specimens, should be given an example or two of the character I have called symbolic. It could be said

## Science and the Creative Arts

indeed of several of the passages I have given, that in the mood they engender, the objects described acquire an added, almost mystical, significance. But in another sort of poetry the symbolism is reached by a different route. The poem in this latter case is the record or expression of a sort of 'poetic feeling' which by itself is not enough to make a poet. But if the gift is there the result may be a most moving sort of poetry. Thus in many of the poems of Robert Frost this quality appears as the product, it would seem, of an experience so intensely felt that it has burnt through to another plane of reality. A woodpile seen far from any human dwelling-place, in the depths of a forest, becomes a symbol, but a symbol that is beyond interpretation; while the choice of two roads becomes beyond words a momentous experience—

*Then took the other, as just as fair,  
And having perhaps the better claim,  
Because it was grassy and wanted wear;  
Though as for that the passing there  
Had worn them really about the same.*

In this low-toned conversational utterance sounds too the author's highly personal word-music; in its accents of tenderness and strength and child-like wonderment sounds the parallel or unwritten poem. An even more striking example of the symbolism (though a less moving piece of music) is the short poem placed in front of his collected verses, which begins—

*I'm going out to clean the pasture spring;  
I'll only stop to rake the leaves away  
(And wait to watch the water clear, I may):  
I shan't be gone long.—You come too.*

The same symbolism appears in the best poems of Frost's pupil and friend Edward Thomas. There is one, for example, which tells of two lovers walking in the rain, whose trembling ecstasy so charges its fifteen lines that the most 'unpoetical' words and rhymes seem to heighten rather than diminish its haunting beauty—



## Science and the Creative Arts

*It rains, and nothing stirs within the fence  
Anywhere through the orchard's untrodden, dense  
Forest of parsley . . .*

It becomes, as we say, a symbol, as the experience itself was a symbol; but of what, no one can tell in articulate language.

By such examples, then, is proved an essential poetry ranging beyond the orbit of meaning and argument to acquire a significance of the same irrational order as we recognise in music and painting. I have stressed that significance as of primary importance for the sake of my case here, but it is true of poetry as of the other arts that the essential quality is most often reached not by a direct and conscious striving but through an intense preoccupation with some aspect of meaning, or purpose, or even technique. Now critics have discussed the conception of this 'pure' or essential poetry long enough to encourage some poets to attempt to achieve it directly, and we have plenty of modern examples, some of them not unsuccessful. But it is also widely felt (and it is my own view, in line with what I have written of other arts) that this achievement of the abstractionists is precarious and less profoundly and enduringly moving than what may without disparagement be called incidental poetry. Some poets have been fully aware of the danger, and in a too-little-noticed couple of pages of criticism the point has been admirably put by Mr. Robert Frost. Sound is of the essence of the poem; therefore 'we will have the sound out alone and dispense with the inessential'. Wildness is characteristic of poetry; therefore we will 'have the wildness pure', and 'be wild with nothing to be wild about'. And the explanation or description of the paradox at which I have already hinted is once more implied. 'The possibilities for tune from the dramatic tones of meaning struck across the rigidity of a limited metre are endless', he writes; we admire 'the straight crookedness' of a good walking-stick, but to seek abstraction is 'as if a modern instrument of precision were used to make things crooked deliberately'. Thus the alternative view that the poetry springs chiefly from what the poet means, from some quality in his subject-matter, is not only plausible,

## Science and the Creative Arts

but may be salutary. And it is a view that the poets themselves have often accepted.

For they are usually occupied with some matter irrelevant to the idea of pure poetry. They revolt against the worn-out 'poetical' clichés and subjects of their predecessors. Like the painters who will have nothing to do with the picturesque, they reject the ready-made 'poetical' themes and defiantly ignore the rules laid down by the academies, imposing on them certain metrical forms and no others. As Dr. Waddington puts it, they are 'busy liquidating the outworn traditions'. Commonest of all is the claim that they (like the daring rebels among the painters) inaugurate yet another 'return to Nature'. They will be hard, precise, exact, and realist, where their fathers were woolly, vague, sentimental, and above all romantic. They will be Classic, not Humanist (or Humanist, not Classic), giving a new meaning to these terms with every fresh use of them. These are perennial claims. Wordsworth and his fellows claimed a return to Nature and 'the language of conversation', but how little this new or revived idiom availed him, when his poetic inspiration lapsed, there are many passages to show. It counts for little even in his best work, 'as when he wrote of—

. . . *a sense sublime*

*Of something far more deeply interfused,  
Whose dwelling is the light of setting suns,  
And the round ocean, and the living air,  
And the blue sky, and in the mind of man.*

Here it was no theory of vocabulary that engendered the poetry, but excitement of a particular kind which kindled a power of using words with a super-rational significance, with what in fact is the special gift of the poet. The excitement may be of many and widely varied kinds and the poetry equally various. And the poet himself will generally claim that his art belongs to the thought or feeling which aroused this excitement, not to the almost unconscious working of a poetic gift of words. Thus for Wilfred Owen, 'the poetry is in the pity;' but the pity alone could not create the wild language of

## Science and the Creative Arts

his lines on the insensibility that comes to the soldier, with its dissonant rhymes and vivid surprising words.

*Having seen all things red,  
Their eyes are rid  
Of the hurt of the colour of blood for ever  
And terror's first constriction over,  
Their hearts remain small-drawn.  
Their senses in some scorching cautery of battle  
Now long since ironed,  
Can laugh among the dying, unconcerned.*

Anger, again, charges the few great poems written by Swift. It is anger directed helplessly against the cruel inescapable fact of bodily decay—

*But, Art no longer can prevail,  
When the materialls all are gone;  
The best Mechanick Hand must fayl,  
Where Nothing's left to work upon.*

*Matter, as wise Logicians say,  
Cannot without a Form subsist;  
And Form, say I, as well as They,  
Must fayl if Matter brings no Grist.*

*And this is fair Diana's case;  
For, all Astrologers maintain,  
Each Night a Bit drops off her Face,  
When Mortals say she's in her Wane:*

*While Partridge wisely shows the Cause  
Efficient of the Moon's Decay,  
That Cancer with his pois'nous Claws  
Attacks her in the Milky Way.*

The sardonic laughter in this poem, of which I quote only a few of the less appalling verses, is shattering, terrifying, and this is partly because the diction is so formal, so precise; it is irony, and the irony becomes a vehicle for poetry. A similar moving inconsistency marks the poetry of Thomas Hardy, where a mournful content and a harsh crabbed 'unpoetical'

## Science and the Creative Arts

vocabulary are stretched out on the rack of a framework of metre recalling the jiggling fiddle music of the poet's youth. There results a great but 'ugly' beauty, which the academic critic is generally at pains to deny.

Indignation of a different tone sustains some of the best modern poetry. And while this has been the indispensable driving power it does not alone account for the poetry itself and its peculiar music. Its wild incoherence and harsh discords often recall the sardonic laughter of the Fool in *Lear*, and its pattern was set, perhaps, by Mr. Eliot in such lines as these, written as long ago as 1920—

*. . . What will the spider do,  
Suspend its operations, will the weevil  
Delay? De Bailhache, Fresca, Mrs. Cammel, whirled  
Beyond the circuit of the shuddering Bear  
In fractured atoms. Gull against the wind, in the windy straits  
Of Belle Isle, or running on the Horn,  
White feathers in the snow, the Gulf claims,  
And an old man driven by the Trades  
To a sleepy corner.*

*Tenants of the house,  
Thoughts of a dry brain in a dry season.*

That is a fair sample of the substance of the earlier of this modern poetry, with its peculiar beauty of sound; but the contemporary music was a later invention. Thus Mr. Day Lewis—

*You above all who have come to the far end, victims  
Of a run-down machine, who can bear it no longer;  
Whether in easy chairs chafing at impotence  
Or against hunger, bullies and spies preserving  
The nerve for action, the spark of indignation—  
Need fight in the dark no more, you know your enemies.  
You shall be leaders when zero hour is signalled,  
Wielders of power and welders of a new world.*

And Mr. W. H. Auden writes—

*August for the people and their favourite islands.*

## Science and the Creative Arts

and Mr. Frederick Prokosch in his beautiful and sumptuous  
Ode

*For nothing is certain, forever*

*We still have to learn and endure how the marvel and vigour  
Of youth must vanish and from these arteries forever  
The springing delight must leak, and all our adoring  
Valleys and waves and wonder.*

In all these we hear so many personal variants of a common music to which all contribute, inspired by a mood of indignation and despair.

Other emotions may play the same part. Such in a thousand examples is the passion of love, from its exultant onset—

*For henceforth, from to-night,  
I am wholly gone into the bright  
Safety of the beauty of love:  
Not only all my waking vigours plied  
Under the searching glory of love,  
But knowing myself with love all satisfied  
Even when my life is hidden in sleep;  
As high clouds, to themselves that keep  
The moon's white company, are all possess'd  
Silverly with the presence of their guest;  
Or as a darken'd room  
That hath within it roses, whence the air  
And quietness are taken everywhere  
Deliciously by sweet perfume.*

to its melancholy extinction—

*And flesh is flesh, was flame before,  
And infinite hungers leap no more  
In the chance swaying of your dress;  
And love has changed to kindliness.*

While from the tremendous discoveries of religion may be created such a sublime pattern as this of Gerard Manley Hopkins—

## Science and the Creative Arts

*I admire thee, master of the tides,  
Of the Yore-flood, of the year's fall;  
The recurb and the recovery of the gulf's sides,  
The girth of it and the wharf of it and the wall;  
Stanching, quenching ocean of a motionable mind;  
Ground of being, and granite of it: past all  
Grasp God, throned behind  
Death with a sovereignty that heeds but hides, bodes but abides;*

or such blinding flashes as these lines from Browning—

*Some think, Creation's meant to show Him forth;  
I say, it's meant to hide Him all it can,  
And that's what all the blessed evil's for.  
It's use in Time is to environ us,  
Our breath, our drop of dew, with shield enough  
Against that sight till we can bear its stress.  
Under a vertical sun, the exposed brain,  
And lidless eye and disemprisoned heart  
Less certainly would wither up at once  
Than mind, confronted with the truth of Him.*

In lines like these, passionate faith kindles a poetic fire of such intensity as to fuse to a molten white heat the most congested and unpromising verbal material. Even theology may be the excuse and opportunity of a poet sufficiently endowed with the authentic fire. A desire to justify the scheme of creation set forth in Hebrew and Christian myth was the avowed purpose of *Paradise Lost*. But it is an entirely insufficient explanation of either the fierce majesty of some passages—

*While thus he spake, th' Angelic Squadron bright  
Turned fierie red, sharpening in mooned hornes  
Thir Phalanx, and begann to hemm him round  
With ported Spears, as thick as when a field  
Of Ceres ripe for harvest waving bends  
Her bearded Grove of ears, which way the wind  
Swayes them; the careful Plowman doubting stands  
Least on the threshing floore his hopeful sheaves  
Prove chaff. On th' other side Satan allarm'd*

## Science and the Creative Arts

*Collecting all his might dilated stood,  
Like Teneriff or Atlas unremov'd:  
His stature reacht the Skie, and on his Crest  
Sat horror Plum'd; nor wanted in his graspe  
What seemed both Spear and Shield: . . .*

or the enchanting quietness of others—

*Now came still Eevening on, and Twilight gray  
Had in her sober Liverie all things clad;  
Silence accompanied, for Beast and Bird,  
They to their grassie Couch, these to thir Nests  
Were slunk, all but the wakeful Nightingale;  
She all night long her amorous descant sung;  
Silence was pleas'd: now glow'd the Firmament  
With living Saphirs: Hesperus that led  
The starrie Host rode brightest, till the Moon  
Rising in clouded Majestie, at length  
Apparent Queen unvaild her peerless light,  
And o're the dark her Silver mantle threw.*

Nor is the miracle to be explained as merely 'description' of surpassing aptness, eloquence and precision. It is, in fact, nothing of the kind; the passages quoted could have included all the matter-of-fact descriptive elements and still remained valueless as poetry. In other words, the poet's greatness depends upon his command of incandescent language, of rhythm and cadence, his power of creating a pattern of evocative words; for a 'mute inglorious Milton' is not a Milton at all. We are too apt to forget that all description in words involves the use of arbitrary symbols, which do not 'represent' the thing described save by a convention unconsciously accepted. Poets have often been moved to record the sound of bells; but their descriptions though conventionally regarded as 'pictorial' renderings will be found to give that impression only because they are themselves beautiful as language. Thus Milton wrote—

*Oft on a Plat of rising ground,  
I hear the far-off Curfeu sound,*

## Science and the Creative Arts

*Over som wide-water'd shoar,  
Swinging slow with sullen roar;*

And Cowper—

*How soft the music of those village bells,  
Falling at intervals upon the ear  
In cadence sweet, now dying all away  
Now pealing loud again, and louder still,  
Clear and sonorous, as the gale comes on!*

In the same way the description of a snake in one of the poems of D. H. Lawrence is only conventionally like a snake's in movement; the language has its own independent beauty of rhythm, even though it may have been suggested in the first place by the other:

*He drank enough  
And lifted his head, dreamily, as one who has drunken,  
And flickered his tongue like a forked light on the air, so black  
Seeming to lick his lips  
And looked around like a god, unseeing, into the air,  
And slowly turned his head,  
And slowly, very slowly, as if thrice adream,  
Proceeded to draw his slow length curving round  
And climb again the broken bank of my wall-face.*

This is true of all 'descriptive' poetry deserving of the name—

*The swimming vapour slopes athwart the glen,  
Puts forth an arm, and creeps from pine to pine,  
And lingers, slowly drawn.*

\*                      \*                      \*

*And rise, O moon, from yonder down,  
Till over down and over dale  
All night the shining vapour sail  
And pass the silent-lighted town,*

*The white-faced halls, the glancing rills,  
And catch at every mountain head,  
And o'er the friths that branch and spread  
Their sleeping silver thro' the hills*



## Science and the Creative Arts

The enchantment here again depends on the rhythm and music of words, their value not as meaning only, nor as exact and vivid epithets, but as elements in the newly created pattern which we call poetry. Yet in every case it would seem that the poet's own chief pre-occupation was with his description or meaning, with something intensely seen or felt or heard or imagined and not with any abstract poetic qualities directly and consciously attempted.

And it is precisely this paradox of the indirect approach that gives his opportunity to the materialist who would contend that the poet's art is merely craftsmanship in the description of things in themselves beautiful, or in the expression of thought, feeling, propaganda, and 'constructive ideas', or even in firing the mind with generous (or other) causes. That is always the popular conception of poetry and it is also, apparently, the scientific view. But if we grant the gap between the conscious intention and the half-conscious achievement the paradox is solved. Though the subject-matter is the occasion of the poetry it is not itself the poetry.

There is, however, another view of the matter which would reject both the materialist argument and the contention I have implied here, that poetry is a state, a condition to which language may attain. It might be argued as an alternative to these views, by a critic of the Romantic School, that there is a special order of poetic feeling. By this, objects may be transfigured and acquire an unaccountable symbolic significance, and actions or character may be discovered to possess what is called moral beauty or grandeur. Poetry, it would then be said, is the art of recording and expressing that feeling with precision. Now I would not wish to seem to disparage the importance of the experience in question, so often ridiculed by the middle-aged and elderly, who have lost the faculty required for it. It may be as liberating as art itself. To a mind sufficiently sensitive to this sort of 'poetry', the night sky, an insect in the grass, a lichen on a tree trunk, the flight of birds, or the smoke and flame of a bonfire, may be the occasion of a supremely enlightening experience; while a story of self-sacrifice or forgiveness or devotion may take on the quality of a

## Science and the Creative Arts

revelation. But I must clearly distinguish between this 'poetry', which is lived by the saint and the lover, and the poetry written by the creative artist in words. As in painting, a work of poetic art is not created by the copying or recording or reproducing of something that is beautiful in its own right, in its own medium, or imaginative in the sense of fanciful. The 'poetic feeling' is lived; its medium is the experience of living; it is life itself that acquires beauty and significance, while in the creative arts it is the paint or the stone or the words that must themselves be beautiful. It is a case of creation in terms of a material, and the media must not be confused.

★

★

★

To stress in this way what could be called the merely formal side of the arts may be regarded by some as a lowering of their status. Instead of being occupied with themes of deep concern to the race or with important human intellectual or emotional experiences, the poet is to become a maker of patterns only; from being a prophet he is to be degraded to the status of an artificer. But, quite apart from the inadequacy here of the word pattern and the importance of the indirect approach as I have described it, the reverse is surely the case; the arts are in this way ennobled. For to disparage the abstract appeal is to ignore the supreme mystery of form, which lies forever behind the fact of creation. It is the mystery by which like expresses unlike, by which a wonderful and unaccountable shape and embodiment may be given to impulses previously inarticulate, unformed, and obscure. And if we have the vision to view them aright, freshly as if seeing them for the first time, those forms become for us supremely moving, or as we say, profoundly significant. Science may postulate a single universal causal system, though it is unproved save with a definition of law so wide as to be meaningless. But man has on the other hand very constantly conceived existence as a conflict, or a state of tension or interaction, a dialectical process in which 'matter is informed by spirit'; this is what it 'feels like' to him (and even Dr. Waddington recognises a 'feeling of freedom which men have'). Now I have already explained how these

## Science and the Creative Arts

terms refer to two tendencies in things, the one mechanical and lifeless and susceptible of analysis, the other creative and simple; the one, which we call matter, momentarily lit up by the other, which we call spirit, streaming through it in endless creative activity, like the glowing points of a flight of rockets. But while it is by that very opposition or interruption that the creative power is made known (as the living lines of the plant are made known by contrast with the regular geometrical framework of the trellis on which it grows), yet it seems as if it is only by unceasing effort that the spiritual existence is maintained. Figures of this opposition, this struggle, are to be found in the myths that have haunted man's imagination for many centuries—of Love and Death, of Prometheus Bound. It is an unceasing struggle to give fresh forms and embodiment to a fleeting spirit or essence, whose existence is made known to us in no other way.

It is to that world of newly created forms, then, that I would refer all authentic and original works of art. To me they are not copies of something else already created, but themselves creative, new, and wonderful. Their hieroglyphic patterns are not something trivially decorative, but incalculable, sublime, taking the mind over the edge into a different world, indescribable in rational language, however desperately we may borrow terms drawn from our ordinary human experience, and speak of grandeur and grace, tenderness and strength. They have the force and authenticity of a revelation, as if of an order of being more 'real' than the everyday world.

Thus spirit is known only in terms of matter; it cannot be viewed directly, and cannot be known apart. In this there is perhaps a figure and a lesson of supreme importance for the 'abstract artist', the seeker after 'pure poetry'. Too great an awareness of what he deals in might injure him. And it may be that by calling attention here to the essential qualities of works of art I am doing them a disservice, by inducing a ruinous self-consciousness. I am making worn and familiar something that should be magically secret and unpublished, with a dewy bloom that is lost with handling. My examples I have taken deliberately, not to labour and spoil things, from

## Science and the Creative Arts

sources already well known. Others better could be readily found, but I should hesitate to use them for the reason given. There is also another risk. It is the fate of the would-be interpreter to grow familiar with the sacred things he handles; he must sacrifice something of their vividness and of his own awe, for the sake of those to whom he introduces them. The teacher and the museum official, the preacher of sermons, and the purveyor of revolutionary gospels, alike suffer in this way. It is a risk I run here. But to explain these matters once, forgetting the explanation ever afterwards, was perhaps worth while, if by so doing I have helped to save them from the grip of a scientific dogmatism.

## CHAPTER III

### Science and Ethics

**I**n the preceding section I attempted to show that the value we attach to works of art is irrational, irrelevant to the material existence and interests of man, and serves no purpose in the evolutionary process. But beauty is only one of the values; others too can be shown to be irrational, not only playing no recognisable part in the process of evolution which nature reveals, but often standing as a direct negation of its methods and presumed purposes.

Dr. Waddington, true to his scientific monism, makes a cardinal point of the need for a natural self-sufficiency in ethics, for a criterion based upon 'the whole line of human evolution'. He remarks that 'observation [*sic*] of the course of man's evolution from the animals and of the historical development of human personality, provides a criterion by which we can decide between advance and retreat; it gives direction'. Confidence in such affirmations as these and repeated references to the 'observed process of evolutionary advance' is perhaps a little shaken by the statement on another page that 'the succession of fossils can be twisted to support any theory of evolution you choose'; 'history,' also, we read, 'the largely hypothetical past, is a heap of data in which one can bring to light examples to prove almost any theory one wishes'. 'Observation' is hardly the right word here. Yet in spite of these damaging admissions it may be granted that the evolutionary process does reveal the gradual development of certain qualities special to man, of intelligence, power of organisation, and control over nature; these have helped him in the struggle for existence, and in this sense he has advanced. But where in this process do the 'virtues' appear, with the ethical values to which the scientist constantly refers? 'It is easy to run off a list of the virtues—energy, tolerance, creativeness, and so on;' '... the qualities of man which we usually

## Science and Ethics

consider the most spiritual, his unselfishness, his striving, his love for his fellowmen; 'the perennial values of truth, of fair dealing, or co-operative sympathy . . .'; these are Dr. Waddington's words. But what encouragement do nature and the evolutionary process give to most of these qualities? Energy may be rewarded, like intelligence and the power of planning, but the rest are positive handicaps in the struggle for existence. Nature puts a premium on treachery and cunning, not on trustworthiness or fair dealing; on aggressive and possessive self-assertion, not unselfishness, compassion and love for our fellow-men; on predatory competitiveness and a ruthless destruction of our rivals, not tolerance and disinterested service. If science is to say that it cannot accept any standard of value not discoverable in nature and the process of evolutionary advance, then these must be the values in question.

Man, it is said, is to go 'forward along the path evolution has marked out for him'. But it is surely a misuse of words to speak of going 'forward' without a fairly clear notion of the goal to be reached, or the purposes which the 'progress' is to serve. 'The edifice of knowledge is growing,' Dr. Waddington warns us (and I should be tempted to add, mechanical efficiency is constantly increasing) 'with no one who knows what it is supposed to manufacture.' How then is this blindness and want of direction to be remedied? If, as Professor Huxley says, henceforward, instead of groping blindly, man is to become trustee for his own evolutionary progress, it is surely necessary that he should have some sort of trust-deed making clear the intention of the trust. If it is always, and merely, 'towards a greater range of control', the direction is not sufficient. It must be control for some purpose; it requires some sanction. If man is said to have 'progressed beyond the wolf and the tiger', he must have some criterion by which he rejects the ethics of natural wolfishness in favour of some human ideal; otherwise intelligence and control over nature will remain in the service of a less crudely bloodthirsty but otherwise unaltered essential wolfishness.

It is remarkable that the purpose of the evolutionary process is always assumed (as it would seem almost unconsciously) to

## Science and Ethics

have an ethical value; it is progress towards something 'good'. But it remains necessary to define goodness. Efficient functioning is not enough, since function implies a definite purpose; nor can we say that the goodness of the end may be taken for granted. It is almost like an attempt at gate-crashing into the world of values to raise the voice and shout 'Goodness is a perfectly ordinary notion . . .', for it is surely unscientific to admit such a notion unaccredited; it must (from the scientific point of view) be first proved reasonable and in accordance with the tendency shown by evolution so far, and that, as I have pointed out, is apparently not true of most of the 'virtues' accepted by scientists. It is equally unwarrantable to take for granted, as a sufficient check on aggressive and predatory instincts, what is called 'ordinary decent behaviour', and to treat this as something 'simple and natural'. It is by no means natural and requires as much explanation as the more obviously self-denying forms of 'goodness'.

Some scientists would doubtless object, and rightly, to the discussion of so abstract and colourless a notion as 'goodness'; they would ask for more particulars. Let these forms of goodness, these virtues, be named again then:—tolerance and forgiveness, kindness and compassion, fair-dealing, gentleness, unselfishness, service, and mutual devotion. These are some of the qualities we are agreed to call good, and none of them gives any advantage in the struggle for existence, even if we link with them the notion of co-operation in a community; for while the idea of service would thus be proved rational and economical within the group (as in the case of the ants and bees) the opposite notion, of a hostile self-seeking, would still be imposed on the group in its relation to other groups. It is true that the larger the group to which the individual devotes himself, the more diffused and general is his devotion; but it remains a form of self-seeking until the entire universe is included in the 'group', when the devotion will have become so wide that either the term becomes meaningless or the devotion must be said to be for its own sake, which science would regard as irrational.

A similar objection holds against the argument that these

## Science and Ethics

virtues are all aspects of a 'love' which is to be observed throughout the world of nature. It might be argued, just as it is argued that beauty is derived from sex-appeal, that the unselfish devotion shown in nature by the sexes, in their mutual relation and towards their offspring, is the type and source of all these other virtues. But this again is a goodness of limited operation; for sex-relations notoriously lead to an *égoïsme à deux*, an extended self-interest, with possessiveness and jealousy seldom absent, while parents are generally ruthless towards others in their devotion to their children, whose welfare and interests they quite unscrupulously forward. The confusion is increased by the use of the same word 'love', alike for the physical passion and for the spirit of disinterested service which it at times occasions. But the latter is an absolute, which like beauty is felt to be of value for its own sake, without reference to material existence save so far as this is the necessary embodiment and vehicle for its expression.

It is thus my contention that enlightenment in this matter must come from another source than nature and evolution, that nature and the material world cannot produce the values to which the scientists so often refer, and that goodness cannot be defined as a more and more perfect functioning without some definition of purpose or ultimate aim. And to give the name of god to the evolutionary process, which cannot produce the qualities which science has agreed to call virtues and has every appearance of having been blind, wasteful and blundering, without ethical direction save the test of survival by fitness, would be (to say the least) an unfortunate choice of terms.

★

★

★

If then the source of our power of appreciating values is not to be found in our reasoning faculty nor in the evolutionary process which has produced that faculty, how can it have come into existence at all? By what faculty do we know any of these things? If they are mystical truths or intuitions how do we know that they are not delusive fancies?

Now I have already written of the nature of intuitive knowledge and explained that though it is not reached or verifiable



## Science and Ethics

by any reasoning, it is, like all other supposed knowledge, subject to the test of experience. Dr. Waddington remarks that it is 'a purely academic pursuit' to point out logical errors if a theory gets results. Here the logical proof is lacking but the argument is 'proved in practice' by the long continued testimony and experience of men recognised as intellectually honest and spiritually sensitive, as well as by the conviction of the individual himself. Goodness is known directly, immediately, as beauty also is known; men have constantly testified to the reality, for them, of its existence, and spoken of its nature. It is for them valuable, not as something serving someone's interests, but as something absolute, ruling in its own right, so to speak, something valued for its own sake.

That these things can in this way be shown to exist has seemed to imply the existence of a world, an order of reality, to which they belong, and to this the name spiritual has been given, in 'opposition' to a material world through which it streams, in which it is embodied, and to the articulations of which the reasoning intellectual faculty has been fitted.) Now the relation between those two worlds, to both of which the mind and nature of man belong, constitutes the central mystery of human existence, a mystery not to be disposed of in a couple of pages of speculation. That they are in some way 'in opposition' seems clear; for the lapse of what we agree to call the spiritual side of man not only 'brings down' his physical body to the level of dead matter wholly obedient to physical laws, but 'lowers' his behaviour to the level of the animals; he becomes, as we say, a 'brute beast', a 'natural' man. On the other hand, an access of spiritual sensibility brings to the mind an increased sense of freedom from material bonds and limitations; the discovery of beauty and goodness gives that sense of liberation and ecstasy. And withal man has, in spite of the psychologists, an incurable and ever-present sense of conflict within himself, as real as the conflict he observes outside him, throughout the whole realm of nature, and only through his remarkable 'sense of humour' is this profound inconsistency reconciled, if not resolved!

Thus it is not surprising that man has often identified all his

## Science and Ethics

aspirations towards beauty and goodness with a god whose existence he attempted to prove by an argument little better than linguistic abstraction. God it was who helped him in the battle against those material restraints and lifeless mechanisms and all that selfish and bitter struggle for existence which he was apt to call evil. God became the source of his enlightenment. The oppressive burden of a predatory world was removed in a conception of a god who was a god of compassion, and infinite understanding. And this conception might still have great value for us if it could be detached from the primitive and popular anthropomorphism which depicts god, in defiance of metaphysics, as a person with human attributes, a tribal idol, and more especially if it could be detached from the notion of a Creator of the natural world, and all that savage dogma of incarnation and redemption derived from the myths of a fertility rite, with their outworn formulae. We might then say that God is the source and sum of all that we regard as of spiritual value, towards which we strive. We might by a creative act of faith regard God's being as a reality transcending the physical world. We might even accept the term Christian as a name for the ethics thus opposed to 'nature's law'.

But in this way to prove, or to affirm, the reality of spiritual goods, is to leave unexplained the sense we have of the urgency of the conflict in which we are involved, the revolt we feel urged to make against the forces we call evil. It is always assumed in the theory of evolution that there is such a thing as progress in time, that man has 'advanced' and may continue to do so; and even in Christian myth there is a conception of a leavening, of the redemption of a world in thrall, by a process which will one day be complete. But nowhere in all this is there any answer to the question *why* the process is thus to be spread out over a period of time, with a beginning unexplained save by an unacceptable mythology, and an unthinkable end. A belief in such a process is of course inconsistent with the concept of an omnipotent creator, and what might be called natural religion can provide no better answer or parallel than that of growth, which is a description and not an explanation. Man has 'discovered' goodness and beauty,

## Science and Ethics

and perceived their value; but how they arise and what is to be their end he cannot say. ¶

Now there is a possible explanation of all this that is worth considering, though it may seem like an abandonment of the problem. If we bear in mind again the opposition between intellectual and intuitive knowledge as I have described them, it may appear that all such concepts of beginnings and ends spring from a falsifying mental process unfitted to apprehend the reality of these things. In all such speculations we may be dupes of our power to plan, to make, to do all that Professor Wilson says that language enables us to do so wonderfully, but do with such a false assurance, blinding us to reality as effectively as we are 'blinded by our eyes', in the words of Rupert Brooke's remarkable poem. It may be, therefore, that the struggle is no other than an upholding, a battle that can never be won but will not be lost as long as man is faithful to his deep convictions. On the other hand it may be that we are at a stage of a real progress, an actual advance towards a fuller expression of the spiritual realities; it 'feels like' that, and that is all we can say. But it is in any case a struggle in clearest opposition to the values, such as they are, discoverable in nature.

¶ For whatever view may be taken of the 'end' of the alleged process, the issue now at stake at this moment of time, or at any moment, presents a choice between alternatives that are perfectly clear. Man may either accept the morality of nature and the evolutionary process, or he may set against it another morality, of compassion and co-operation, based on virtues whose worth he recognises in spite of 'nature's law'. The control over nature, the intelligence and mechanical ingenuity developed in man in the course of his evolution, are ethically neutral and may be enlisted in the service of either morality. It is for man to choose.

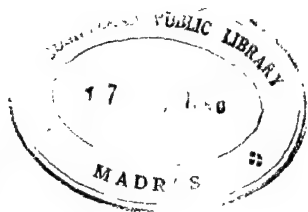
There is of course no lack of scientific encouragement for those who would reject the ethics of compassion and describe them as decadent. It may be asserted, as in the philosophy of Friedrich Nietzsche, that the Christian ethics are the self-justification of the neurotic, degenerate and unfit, denying the strong the advantages due to them, and disastrously protecting

## Science and Ethics

the weak, whose elimination is a necessary part of the evolutionary process. To object to war and fighting and the mutual destruction that prevails in nature is pernicious as well as futile, since ruthless competition is a necessary condition of evolutionary advance.

How little accepted is the alternative to this is evident from a consideration not only of the plant and animal kingdoms and the life of primitive peoples, all fighting for their means of subsistence, but of the modes of life and thought of vast populations in countries nominally civilised; there, though the cruder forms of mutual destruction may be prohibited, the whole energies of the people are engaged in a self-seeking competition for profit, place and power. Life is still a welter of conflict, open or unacknowledged. And there are equally plausible objections from other schools of thought. Thus all the genius of D. H. Lawrence was directed to prove that the deep 'natural' impulses of the primitive man were more admirable than the humane impulses that hold them in check. Even more insidious is the blind sentimentalism that finds an enduring peace in 'nature' and mistakes a presumed unselfconsciousness in the plant and animal world for happiness and contentment.

Yet the conviction survives, perennially renewed in spite of contempt and persecution, that compassion and co-operation and loving-kindness are better than predatoriness, and for this conviction man may become a trustee indeed. All his intelligence and power of planning could be put at the service of such a trust, and his increasing control over the forces of nature would include also a supersession of nature's law and morals. His trusteeship would be identified with the sacred cause of all true civilisation as against savagery, maintaining a belief that certain things are of value for their own sake. Central among these would be the idea of communal service, but equally fundamental would be a faith in beauty and all the forms of creativeness; for these are the flower of that humane and civilised way of life which enlightened man could bring into existence if he had but the faith and will.



## CHAPTER IV

# Science and the Arts in a New Social Order

In the preceding pages I gave some reasons why the arts are to be valued for their own sake, and insisted upon the importance of the culture in which they are cherished. I shall now attempt to show that it is only after his material needs have been satisfied that a man can be free for the disinterested contemplation which a care for culture implies; and that to secure this end it is necessary to set up an authority in the form of a State in whose name men agree to renounce the mutual struggle for subsistence to which as animals they would be condemned by nature. I have shown that this renunciation is prompted by an irrational judgement of value akin to that by which the arts are valued, by which co-operation and service are found to be better than competition and aggression. It now remains to consider whether this State authority could be justified on scientific grounds alone; and to enquire into the extent of its jurisdiction, with a view to deciding in what ways the State could best serve the cause of the arts and of humane culture.

★

★

★

‘A scientist must agree’, Dr. Waddington writes, ‘that production within a society must be production for the society as a whole, and not for private profit.’ Now this assertion implies one of the basic doctrines of socialism, and socialists will be gratified to find it approved. But why should the social order so indicated be approved as peculiarly scientific? To plan for society as a whole would be, first of all, economical; the wasteful confusion of uncoordinated effort would be avoided, and that could be approved as scientific. It would also be a means towards securing the highest possible technical achievement,

## Science and the Arts

by a pooling of ideas and knowledge in large-scale operations; science would be given a full share in an undertaking which obviously concerns it. But in proposing the substitution of the common good for individual and personal advantage the doctrine is less obviously such as a scientist might be expected to approve. On the contrary, the evolutionary process appealed to by science, as far as it can be 'observed', reveals no instance of a race of creatures whose survival had been secured by the adoption of a communal way of life; and no such general tendency is in fact to be observed. A few instances of mutual aid within the flock or herd (but also of unrelenting hostility without it) count for little against the overwhelming number of instances in which individual self-preservation is the rule. The human race itself might be cited, but the highest social organisation so far achieved by it has been created in the interests of only a portion of the society, not of the whole. Human history does no more than suggest that a thorough-going and efficient organisation is advantageous in war and in trade rivalries; it shows no general tendency on the part of mankind to adopt such an organisation for the common good. That the beneficiaries of elaborate social organisations have been the people at large, rather than a parasitic class, history gives no assurance. It is implied that the production in view should be a form of service rather than a profit-seeking activity designed to benefit individuals at the expense of the community. For this, science and its criteria can give but little sanction; so far as scientists are agreed in such matters it would appear that evolutionary progress has been due to the inheritance of the qualities of exceptionally strong and unscrupulous individuals who have flourished at the expense of their fellows. Still less can science justify mutual service as an end in itself; for that, appeal must be made to some super-rational test of value such as I discussed in the previous chapter. Only in some such way is it possible to justify a collective and mutual pact of co-operation replacing the search for personal advantage. By analogy with nature only a system of *laissez-faire* could be upheld; the field must be left free for unrestricted competition and individual effort. But any form of socialism must proceed

## in a New Social Order

from an enlightened human resolution to replace the 'free competition' which, as Engels said, 'is the normal state of the animal kingdom,' by a system of collective responsibility in which society would guarantee to each of its members the means of existence. In such a society, while science would play an indispensable part as administrator and executive—planning and constructing and experimenting—the function of the legislature, by which policy is directed, would be fulfilled from some other source. Nature, with its morality of mutual destruction and ruthless competition, its waste and cruelty and blundering inefficiency, would be opposed by man with his intelligently directed concern to prevent suffering, his compassionate and visionary hope of a world of mutual service and co-operation. In this crusade science could be a valuable servant, not a leader.

But if nature is thus to be thought of as frowning upon the presumption of man in defying her laws, what hope, it may be asked, is there then of enduring success for his cause? The answer must refer to man's dual existence, and to the faculty he has acquired by which he judges, with passionate conviction, certain things to be good in themselves, and others thwarting them to be bad. That belief is a perennial one; it inspires his deepest devotion; and even if he can foresee no final success in overcoming natural evil, man can find fulfilment in maintaining a struggle against it. But that some heartening success has already come to him may be shown in several ways. Already men obey an authority set up by mutual consent to prevent the crude physical struggle for possessions and livelihood formerly prevailing among them; the socialist doctrine proposes to extend this authority's power to prevent those predatory anti-social activities altogether. It argues that profit-seeking and the quest for personal advantage in trade bring not only disaster for the victims of the struggle, but require for their success the cultivation of qualities which it judges to be bad in themselves, such as lying and deception and disregard of the feelings and interests of others; the morals of trade with its ransom-holding and monopoly-seeking are inconsistent with the conception of good on which socialism is

## Science and the Arts

based. Again, men are already, in theory at least, granted the right to a 'living wage', not the mere price of their labour reached in the competition of the open market; and the socialist proposal is essentially no more than that—in other words, to pay men according to their needs (which ideally should be the same for all), while requiring them to contribute in labour to the common good according to their ability. To serve the community through the State would thus be the highest honour and privilege.

The institution of such a State would bring a fundamental change in many of the current ways of regarding human effort and labour; it would require an attitude foreign to individualist habits of thought. Thus by the collective pact of socialism a claim to the support of society would be the right of every man, not a dole awarded as a palliative to the needy victims of a competitive struggle. Nor would he be granted a variable payment awarded in a tradesmanlike way for a supposedly measurable deservingness, or earning capacity, a matter in any case largely outside his control. He would be entitled to subsistence as an equal right with others. Nor again would there be any talk or question of this right to security undermining men's characters, weakening their independence and capacity for initiative, as is often contended by the interested defenders of *laissez faire*; it would be recognised that far greater injury to men's characters is caused by fear of poverty than by setting them free from the bitter struggle for 'glittering prizes', with its alternatives of squalor and parasitic wealth.

Under socialism the State is conceived, not as the policeman of a *laissez-faire* society, keeping the peace to a limited degree only, but as the symbol of a collective renunciation of mutual strife; it is 'an ideal embodied in an institution'. It would be democratic in the sense that it would govern in the interests of all the members of the community, not of a privileged few; it would secure for all an equal opportunity to contribute to the common good and an equal right to self-expression. But it would not necessarily be government wholly in the hands of a parliament or of committees and representative bodies. Though



## in a New Social Order

governing by consent, the State must receive obedience (as indeed do the police under *laissez-faire*); it must impose discipline, and in that sense could be even called fascist. In the field which is its concern (and the question of the limits of that field is of course a crucial matter to be discussed presently) it would bring less, not more, freedom. For one of its primary functions would be to restrain all that 'free competition' which man as an animal still desires. 'Profiteering' of every kind in essential goods would be forbidden, and this would incidentally solve the problem of anti-semitism; for those anti-social cornerings and holdings to ransom and exploitations, for which some Jews are so generally hated, would be forbidden alike to Jew and Gentile. The desire to compete and exploit and to prey upon others might need an outlet perhaps, as a realist philosophy must recognise; and it is this desire whose admitted existence alone makes anarchism impossible as a political creed. To leave the details of production and the government of industry largely in the hands of guilds or trade-unions, as the anarchists propose, would doubtless make for efficiency and a humane and flexible organisation. But such corporations would be, no less than individuals, inclined each to serve its own advantage rather than the general good, and the central authority of the State would be needed to subdue their mutual differences, representing in effect the consumer as against the producer. Thus it would seem that it is only after obedience to an accepted authority has been secured, with power to restrain man's warlike and predatory impulses, that a humane and orderly society could be established.

★

★

★

A possible question may be answered in passing. If the State embodies the ideal of a renunciation of natural conflict, why (it may be asked) should not the source of that ideal, the faith that sustains it, also be embodied in an institution, namely, a church? And does not the Christian Church in fact represent the spiritual wisdom accumulated by man over many centuries? Does it not symbolise the traditional or empirical proof of his intuition of good, of his belief in the worth of unselfishness and

## Science and the Arts

compassion? It may be granted that the Christian Church has sometimes done this, and will perhaps do so again, though it has not been alone in so doing; religion, defined as a sense of the goodness of certain things and a mystical conviction of their value, is not by any means a monopoly of the churches. But unfortunately at this actual moment there is no sign whatever of its effectively resuming the function. The history of the Christian Church in Europe, with its predominant care for its vast wealth, the generally admitted hypocrisy and dishonesty of its priests, and its implacable hostility towards all scientific knowledge and free enquiry, might seem sufficient grounds for dismissing its claims; but these are perhaps only the incidental failings to which all such institutions are liable. A more fundamental objection has regard to the rigid insistence of the Church upon its dogmas—its refusal to regard the miracle of unselfishness as mystery enough; it must have a dogma of Redemption, plainly derived from a savage fertility rite. Equally insuperable are its adherence to formulae in disregard of the temporary and symbolic nature of all verbal expression; and its fantastic assumption of authority. Above all there is its monstrous word-begotten dogma of an omnipotent god and creator tolerating a world with suffering, leaving it free to condone with complacency every kind of injustice and to dismiss as a 'disruption of the universe' any metaphysical demonstration of a dualism in its nature. For theological monism may be as obstinately blind to the facts of experience as the scientific variety. For these among other reasons no change in the Church's standing in relation to the State is likely at present in Europe and the West.

★

★

★

But while an institution embodying man's spiritual aspirations might be regarded as in the highest degree desirable, its support is not needed for a belief in the necessity of a State with far-reaching powers over the aggressiveness of men. Such a State would not however be an end in itself, as in Nazi doctrine. Nor would it be directly concerned with what may be vaguely called the spiritual side of man's nature. It would be established

## in a New Social Order

for the purpose of securing for all men the material means of existence, of ridding them of the overmastering fear of poverty and thereby setting them free for such intellectual life and spiritual adventure as they are capable of. It would be set up in the belief that fear and anxiety, drudgery, hardship and suffering are not ennobling but stunting, however useful they may have been found as a corrective by rich and idle persons ignorant of the harsh realities of life on an insufficient and precarious wage. Only in its use of the principle of service instead of self-seeking would the State invoke a truth calling for wider application; and there it would be saved by the limitation of its scope. Did they teach that the service of the State is the whole duty of man, the doctrines of socialism would be as arid and uninspiring as those of Comte, preaching 'the service of humanity'. For in spite of the Russian example it seems that the mind of Western man requires something more than this. He craves a window opening on a wide and far-distant horizon. Many men, too, living in the wake of anthropomorphic religion, doubtless crave a personal god, in the service of whose purposes they can take a part. But man's duty to the State and its responsibility for him concern only a part of his life, in a word, his material existence.

★

★

★

In the development of the technique of that existence science could play a leading part; it could improve the amenities of life to an enormous extent. But we are here concerned less with the details of its functions than with what the State could not and should not do, and the range of the scientific field need be merely indicated. It would extend to the economical production of fuel, light and power, the discovery by experiment of new materials and fabrics, the provision of housing and communications and above all the production of foodstuffs. In all these directions science would have unlimited scope and responsibility and would be the most important State service. The technique of mass-production and the use of machinery would be its special concern, and given nation-wide planning (such as has been compulsorily adopted in this time

## Science and the Arts

of war) could, by reducing the time taken over every kind of work, end by greatly diminishing drudgery and hours of labour. In a *laissez-faire* or individualist society every economy in production has meant so much more unemployment, as well as increased riches for the proprietor. But under socialism, with its controlled use of raw materials and labour, and production ordered to meet considered needs and not left at the mercy of a scramble for profits, this would disappear. Economy in production would improve the material well-being of the whole community. Thus science would work at full power.

The possibilities of that planned and scientifically ordered society would to a great extent depend upon its size and inclusiveness. To speak of '... production for the society as a whole ...' is almost meaningless without an indication of the extent of the 'whole'. Obviously it would be useless to make plans for production and consumption over an area including also countries given up to irresponsible profit-seeking, and this necessarily calls for some form of autarky within the socialist State. This was quickly recognised in Russia soon after the Revolution: the structure of an ordered society could not be exposed to the anarchical assaults and conspiracies of international trade. Obviously, too, it is desirable that population should bear a definite relation to food supply within the political unit, lest the State be endangered from without by a predatory nationalist or trading conspiracy. Thus (and it is a typical case) though the love affairs and personal relations of its citizens are entirely their private concern, the birth of their children is a matter of public concern, in which the interest of the State must be expressed in the control of population by the limitation (or the increase) of families. But the larger the socialist political unit becomes, the simpler becomes this problem and the greater the possibilities of improving the material well-being of ever-larger and better-organised populations. In the matter of international relations involved here the socialist State must not only be self-sufficient, but be prepared to defend itself against the exponents of a predatory creed, just as humanity at large must defend itself against the horde of bacteria or wild beasts threatening its very existence. A

## in a New Social Order

tragic dilemma is presented—of pacifism and brotherly love in a natural world whose inescapable physical basis is mutual destruction, the preying and feeding of one species upon another. Decision may well turn upon one's belief regarding the origin of that unselfish impulse, whether it springs from a source external to man, independent of his efforts and of his so-recent discovery of beauty and truth and charity, or whether it rests with him like a trust, expressed only in his actions and beliefs, however illogical and inconsistent. To Western man the latter view is, I think, imperative. Life is a struggle against evil; that is what it 'feels like' to him. For him non-resistance is tainted with spiritual defeatism. By willing co-operation among peoples the dilemma may be in part removed to a distance (though not resolved) and it must be man's constant endeavour so to extend the field of his co-operative and compassionate planning to ever larger and larger groups.

The change or development from individualist self-sufficiency to a scientifically planned large-scale economy has in the past been by no means a continuous progression. It has suffered many set-backs due as a rule to wars and failures of mutual trust. Some men indeed have asked whether the change has been actually progress at all in the sense of a benefit to the spirit of man. Division of labour (it has been said) brings a meaningless soul-destroying slavery, a method of making things in which no-one can call the work his own or be held responsible for it. In agriculture the new scientific planning proposes to substitute a narrowly specialised activity for the far more satisfying subsistence or mixed farming by which an almost complete food supply is grown within a single small area, or even by a single family unit. The change, it is said, is retrograde, a decline from dignity and a full life to a degrading dependence upon trade and bargaining. The objector will point also to what he regards as the finer buildings, the more beautiful tools and appliances, produced under the less specialised order and less mechanised industry which prevailed in the past. Now these objections would have weight under a system of uncontrolled competition and *laissez-faire*;

## Science and the Arts

self-sufficiency would then have obvious advantages, both material and moral, and as long as personal, social and international distrust prevent sincere co-operative planning so long must self-sufficiency remain preferable, indeed be imperative. But granted the faith and confidence needed to set up a fully authorised socialist State or federation of states the alternative has the greater advantages. It is less precarious, since by collective effort and responsibility men are insured against many of the disasters due to 'natural causes'—to the uncertainties and inequalities of soil and climate and to the ravages of pests. It is above all economical, avoiding the disaster of wasted human life and effort; for only by large-scale planning and the consequent use of machinery is it possible to reduce the drudgery of labour; for most hand-labour under individualism, such as farm work in hoeing and planting-out and indeed almost all the labour required for man to extract a living from the earth, is as soul-destroying as any of the processes of mass-production. Moreover, the planned and scientifically organised society by no means stands for ugliness, as admirers of the art of the past so insistently contend. These men too often ignorantly look back to a pre-capitalist social order which in fact never existed. Rightly hating modern commerce and profit-seeking industry they idealise, with a woeful confusion of dates, the 'sturdy individualism of the Middle-ages', mistaking the 17th Century houses of successful merchants for the dwellings of mediaeval peasants, whose insanitary hovels have long since reverted to the mud of which they were made. Even the cathedrals they so greatly admire are monuments to the wool-merchants who by paying for their erection sought absolution for their rapacity. In admiring the tools, the carts, the ploughs and harness, of the pre-mechanical farming age these men show a right regard for beauty, but also a lack of faith in the unfailing creativeness of man. They confuse also, under the hated name of industry, the potentially beneficent machine with the commercialism which has hitherto exploited it, and condemn it in disregard of the amelioration it can bring to human life. Were these men, with their nostalgia for the past, alone in being concerned

## in a New Social Order

with beauty and freedom and a full life their case would deserve more attention; but they have no such monopoly. Scientists, engineers and technicians may have just as great a care for these things, together with a wider vision and greater faith. Characters just as fine and houses and objects of use just as beautiful (but beautiful in a new way) as any of the admired types of the past could be created by fully mechanised industry in a modern socialist community.

And beyond all this lies the free culture, the self-education and self-expression of which the socialist care for material well-being is only the ground or first requirement. To secure for all men freedom from want and fear of bodily starvation, to give to all a generous minimum of food, clothes, housing and leisure, it is necessary in the conditions of the natural world to set up a State which all must agree to obey. In the service of that State all branches of applied science will legitimately find their fullest scope and opportunity; their concern is with material things. But the rest, being a culture of the spirit, must be wholly free.

This free culture, as I have said, is part of the supreme achievement of human life, its final justification; and it proceeds also from the true democratic ideal. It is the creation of free men, who may yet choose a life of service. A paradox presents itself here. Though a man may find his greatest personal fulfilment in service and as a member of a community or institution, that service and that association, to be of value, must be freely and spontaneously given. This is true especially of spiritual institutions: the conviction that prompts adherence and devotion to a church must be individually authentic and spontaneous, not the mere acceptance of authority. Indeed a genuine devotion will often not accept what authority requires and in this lies the salvation of institutions. They may be needed to give form and permanence and concrete expression to the traditions of the race, but it is wrong for them to claim finality for their dogmas and formulae, which should be regarded as no more than the temporary statement, in a symbolism of words and images, of a creative essence transcending all such 'imperfect copies'. A search for 'eternal' principles

## Science and the Arts

capable of being expressed in words can end only in the discovery of the *mathematics of lifeless matter*, or worse still, in a mistaken and dogmatic adherence to verbal formulae. Such are the false unalterable 'certainties' and formulae of a so-called Divine Word to whose fixity in the midst of flux some people cling desperately, as scientists cling to the 'certainties' of material fact and causal systems. Such belief in finality leads to the acceptance of Church and State as ends in themselves, to which individuals must be sacrificed. A more inspiring faith would find in individual men so many potential instruments of spiritual discovery in a search for 'truth', but making the sacred value of truth less a matter of plausibly but falsely 'exact' statement and cold analysis than of passionate apprehension and communication such as we experience (for example) in music and friendship.

And if the State is not to be an end in itself, a monster created by man to devour him at the last, how is it ever to be changed or reformed, how can it retain its sensitiveness to new ideas and still be responsive to the ever-wider-ranging idealism of mankind? This responsiveness is essential to growth and vitality, and is only made possible by some form of representative government, which will make and modify the laws which all agree thereafter to obey. Obedience to law, with constant criticism resulting in constitutional change, are the pre-requisite ground or condition of a stable society, and they are perfectly consistent with the completest spiritual freedom. Revolutions and anarchical disregard of law are fatal to the ordered development of that society, since they invite the inevitable counter-revolution and all its evil consequences of tyranny and violence. But freedom of thought is a different matter. The wildest speculation and the most audacious criticism, flouting every species of authority in doctrine, as long as they do not involve conspiracy against the State, are to be welcomed by it as evidence of spiritual and mental health. To encourage rebellion against received opinions and all self-styled authority in belief should surely be one of the first aims of education, which would otherwise become a mere means of mass-producing a population of docile and efficient slaves.



## in a New Social Order

Such freedom can be justified only by reference to those irrational standards of quality and value which have been discussed in the previous pages. A materialist conception of the human mind would make all its activity subject to law, submitted, like food production and the organisation of industry, to scientific research and regulation at the bidding of the State; it must always be serving a useful purpose in production or propaganda. This view has been largely adopted in Russia, but there is wide agreement that the attempt has failed, especially in the case of the artists, who have been regimented and cared for but required only to express the ideology of the State, to further its immediate purposes and justify its actions. Such dictation proceeds not only from an autocratic conception of the State, which all must serve totally, but from that conception of art and thought for which the only reality is a world of facts and laws and analysable and measurable quantities. |

But this mistaken adoption of a scientific attitude has not been confined to the totalitarian states. It may be detected also in many attempts to mass-produce the appearance of culture in England today. Well-meaning men and women, aware of the value of the aesthetic experience and seeking to make it more widely available, attempt to impart what they call 'good taste' by a process of direct instruction. To this they subject not only adults but children whose immature state of mental spiritual development prevents them from any real or deep understanding of the matter. Like those who would 'revive' the peasant arts and crafts these missionaries seek to multiply or imitate effects instead of setting in motion causes; instead of waiting for growth they manufacture paper flowers. Thus is unfortunately created a new academicism and snobbery. Children become self-conscious and self-righteous prigs with a merely decorative 'culture', or are (more often) permanently afflicted with a distaste for everything claiming the status of a work of art. 'Good books', the best of them rightly exclaim—the odious 'accepted classics'—are school books, which nobody would read for pleasure; and the respectable 'good taste' thus imposed upon them (but fortunately in most cases rejected) is

## Science and the Arts

an infertile ground for the growth of a genuine original culture. Still worse is conventional unconventionality also propagated, linking in an arbitrary mixture a fraudulent enthusiasm for the latest fashions in 'advanced' art and thought, acclaiming at once (for example) the sculpture of Jacob Epstein, the music of Jean Sibelius, the doctrines of psycho-analysis, the poetry of T. S. Eliot, and the political theories of Karl Marx. The same vicious tendency is shown in all 'teaching' of the arts going beyond workshop and technical training and aiming at the cultivation of taste, which should properly be a spontaneous and preferably unanalysed liking. It is ultimately the vice of all academicism, which is a form of orthodoxy that takes a variety of forms. Perhaps the worst of all is that shown by many historians and students of styles with their concept of 'absolute' perfection and a single standard derived from the 'best period' and the 'purest' style. These academies resent novelty breaking into their closed systems of development and deplore the 'lawless and anarchical recent manifestations', which are evidently due (they say) to a lack of traditional guidance and study of the first principles they purvey. To them historical research and scientific classification and comparison seem to reach the essence of the matter. Academicism of a different order is shown in the aversions of artists themselves, who are usually blind to the merit of every sort of work but that akin to their own. This is perhaps inevitable in the creative artist, but the attitude too often degenerates into the lamentable conservatism of the typical ageing academician, whose style was derived from the once-exciting innovations of a decade or so previous, but has now grown stale and exhausted; thus these men too deplore 'the excesses and technical incompetence of the younger generation'. Academicism is of course nothing new. For centuries there have been pedants citing against the young the authority of the Classics and quoting the critics of the ancient world, while the narrowness and intolerance of the innovator grown old have always been the price to be paid for his early creativeness; and the young artist will always revolt against him. What is new is the analytical 'science' of criticism formulating

## in a New Social Order

empty rules and generalisations which establish nothing, making self-conscious and stilted an aesthetic experience that should be as easy and spontaneous as breathing. New also is the mistaken democratic idealism that would take a short-cut to produce a widespread and uniform school-taught culture. I would not deny that children often show a remarkable gift as artists (though it is never a gift of the most far-reaching order) or that this natural ability may be cultivated by sympathy. But it may also be ruined by academic teaching, insisting on correctness in accordance with past practice or worse still on a mistaken technique of naturalism. The essence of the matter lies in the genuineness of the aesthetic experience and the freedom and spontaneity of the creative act; the child is right, and this few teachers will allow or understand.

Rebellious opinion and intellectual activity, the boldest scientific speculation, and the most adventurous creative art, all spring from the same ground of freedom. Law and education must foster them and they must never be subjected to the test of usefulness and practical value. They must remain free of State control, and above all they must be free of the ignorant popular censure. It must be recognised that creative art and thinking are in some degree a mystery into which only a minority can ever enter. Though a society may be organised to secure the material welfare of all men and to provide them with equality of opportunity in every sphere, it does not follow that all will prove to be of equal capacity. Science, discovering laws and making generalisations, naturally stresses the likeness of things and tends to treat men as units in a repeated pattern; a more realistic view would stress their variety and find each one unique. And in this matter of a sensibility to the arts only a few seem ever to possess or acquire the necessary faculty. The wonderful vision of the child seems generally to fade away in adolescence, even without the baneful influence of the teacher, and to most adults the arts become an affair of exciting or sedative story-telling, of sexual attraction or pleasing sound or colour, or even no more than exact and matter-of-fact description. The irrational creative element is dismissed as something 'the plain man cannot understand'. Backed by a

## Science and the Arts

scientific argument that would dismiss it also, on other grounds, a dictatorship of the proletariat in such matters would be a disaster. For the creative element as I have demonstrated it is the growing tip of the plant of the human mind, its exploring antennae; without that sensitive organ the race would be spiritually blinded, and all the material welfare for which the State had been set up would have been secured to no purpose of any moment.

★

★

★

But while the State should thus leave the arts to develop freely, unfettered by any control, has it not, as the representative of the communal will, a responsibility for them? And if so, what encouragement and nurturing can it give them? It follows, I think, from what I have written that its function is to prepare the ground for them, to provide the best possible environment for their free unhampered growth. Avoiding direct instruction in the subject, education in the widest sense could be so planned as to set free the creative gifts of potential artists and to put within reach of all men the aesthetic experience that the understanding of works of art implies.

I may only discuss the subject of education here so far as to show the effect upon it of the arguments I have outlined in the foregoing pages. The State's concern with material welfare, with the abolition of poverty and insecurity, constitutes the first step in the preparation of the ground. A next step is the provision of primary education, to be understood as the cultivation of the means of self-expression in speech and writing by the teaching of language. By awakening curiosity and encouraging an open mind it should enable the child thereafter to educate himself. Primary education too must include the imparting of that civic or religious sense by which the individual becomes aware of the social contract and its sanctions, and so comes to feel himself part of a community. That measure of literacy and discipline having been secured, the State could proceed to the provision of vocational training—the cultivation of the technical skill and acquisition of scientific knowledge needed for all kinds of productive work. This is not,

## in a New Social Order

strictly speaking, education at all, though decidedly a State concern. Such training could start for a majority of children at a much earlier age than has lately been customary or thought desirable; there would be no loss in the curtailing of the 'general' or 'cultural' education which is now by a democratic illusion thought necessary for all. Only a few children would be found capable of benefiting by continued education in the strict sense, and their selection should present no greater difficulty than the classification of the others according to their promise of skill or bent. | The inadvertent exclusion of a suitable child from the advantages of further education need not be irremediable in a system such as I have in mind; it is I believe unlikely that any youth possessing the necessary sensibility and intelligence would ever fail to discover for himself the importance of learning and the arts. Such continued education for a selected few, up to and beyond what is called the university standard, could be provided by the State with a completeness now unthought of at a cost no greater than that of the academically controlled mass-produced false culture which is now the mistaken democratic ideal. A more truly democratic policy would ensure to those fitted for them, but only to those, the benefits of the best available education at no monetary cost to possibly indifferent parents, or to the children themselves, and this is far from being the case at present. For it should go without saying that education should be free for all and not be the privilege of a moneyed class.

Education in the arts would become a part of technical training, and this would not as formerly mean the acquisition of the technical skill of a handicraft, or as in more recent times the practice of 'design' in a 'School of Art', but experience in a factory or workshop where familiarity with machine-processes would enable the artist to design with that Economy, Precision and Simplicity which are the characters of the modern style. Art, as I have said, is to a large extent an affair of grace and style in the making of things functionally efficient for their practical purpose; and the achievement of beauty of this order, as distinct from the 'useless' beauty of the 'fine arts' which are their own occasion, is directly the concern of the State, whose

## Science and the Arts

patronage of the finest work would be essential. Experimental workshops and factories, on the lines of the *Bauhaus* of Walter Gropius, would be an invaluable part of the State's provision of technical training.

The so-called 'fine arts', on the other hand, not being practically useful, are less obviously a concern of the State; and since they claim to be of value for their own sake are apt to be disregarded by the scientific economist. Moreover by another school of thought they and the 'culture' they represent are consigned to damnation in favour of the art (or work) that is the joyful and workmanlike making of things for everyday use—'a culture of pots and pans'. But even so it is admitted that there may be 'glittering pinnacles', types of art which are 'archetypal' and 'for a few brief seconds hold us suspended in a timeless existence'; while the same authority elsewhere calls for 'the work of art which is itself a created reality, an addition to the sum of real objects in the world', objects which 'can only come from the artist's own world, the unique world of his own subjective existence'. Music, as I have shown, is the type of all such 'useless' art; its creation and enjoyment serve no practical purpose, and in all but a trifling number of patriotic and emotional songs can never be of direct use to the State. Opera and the ballet and a great deal of the art of the theatre are plainly in the same case. Yet it is generally agreed, by a consensus of informed opinion, that they are a vital concern of the community and the State should encourage them.

It may do this in a number of ways. Least important, perhaps, is the provision of schools where the technique of the 'fine' or 'useless' arts may be taught; these tend sooner or later to lapse into the vices of academies, and are kept alive only by the recurrent revolts of young and original minds. A more valuable resource is State patronage. Public celebrations call for music, public announcements require posters and typography, public buildings may be decorated, events and scenes of national life need description and record, and all these may be the occasion of authentically created works of art. In Russia and the United States of America, artists have been organised for the performance of these public services, and their liveli-

## in a New Social Order

hood and welfare have been assured them in return. But the welfare of artists is far less important than their freedom, and their actual achievement must necessarily, for the reasons given in this essay, lie outside the purview of the State official with his practical and material standards of success. They should rather be regarded as mystics, outcasts even, whose true vocation lies outside the world of productive industry which is the State's concern; the value of their work must be assessed by standards not normally applied to that of other men.)

If however the need for State patronage be allowed, the key position is occupied by the arbiter, the critic or director, by the light of whose insight and prophetic judgement the vitally creative work of the day is heralded and accepted. The State, expressing the general belief that the arts though useless are important, may set up national theatres and concert halls, museums and art galleries; it may commission frescoes and posters, war-pictures and commemorative sculpture; it may concern itself with the design of postage-stamps and coins, post-offices and railway-stations; but without sensitive and adventurous direction all these activities might end in the rule of a stifling conservatism, or worse still in the application of an irrelevant test of political or other orthodoxy, or in popular judgement by 'the light of commonsense'. Where the irrational and non-material value of beauty is in question what test can be applied? Who is to be the judge?

On an earlier page I spoke of the test of truth proposed by science and agreed to its application, but with a wider reference, to the 'truth' claimed for irrational and intuitive knowledge. I admitted the test of practice and experience. A belief could be accepted as true if it satisfied the judgement of men recognised as honest and spiritually gifted, if it were approved by a consensus of informed and sensitive opinion. I appealed to tradition, as the accumulated wisdom of many generations of men. Now, difficult as it is, I think some such test could be applied here.

In recent practice State patronage of the arts has been on a limited scale only, but it has been by no means unsuccessful. The posters and handbills of the Post Office and the Ministry

## Science and the Arts

of Transport and the display typography of the Ministry of Food announcements have been widely recognised as admirable work. The choice of painters to record the nation's war activities has included almost every artist of vision and proved ability. Now I believe that this fortunate result has been due to the power given to individual men of wide and informed taste in the spheres in question, rather than to what is called official opinion or academic orthodoxy. And I venture to assert that the wider the knowledge of the arts possessed by such a man the more sensitive will be his response to original work. The type of man I have in mind would be familiar with the whole range of the arts in every material, and of every period, from the Stone Age to the present day, caring alike for the best work of Chinese artisans and Polynesian and negro 'savages', and of the Gothic builders of Europe and the Classical artists of Greece and Rome. Knowing the value of both primitive and sophisticated work, he would be convinced that there were artists in every age, however unfavourable it may have been through misguided patronage or misunderstanding of new resources, such as the machine in the 19th Century. Thus he would never deplore the barrenness of his own time or decry the value of genuinely original work in the way that is all-too-familiar among backward-looking archaeologists and half-educated partisans.

In this way too the enlightened critic is likely to be a better judge than a professor at an academy; his view will not be limited to the kind of work he is himself attempting, and being familiar with the endless variety, the unfailing procession of changing styles shown by the history of the arts, he will not be affronted by the most surprising and 'lawless' modern work. His scholarship would make him more, not less, ready to understand originality, and at the same time he would be less likely to be deceived by the unoriginal *pastiche* of former styles. Such a man would be able to appreciate the value of tradition far better than the other, to whom it is apt to mean the rules embodied in some selected past achievement, providing models to be copied. Tradition is rather the national or regional idiom or way of making things, or the language of



## in a New Social Order

the tool or the machine; it is to the artist like the air we breathe and he should perhaps be as little conscious of it, though he forsakes it at his peril.

It is with this inspiring sense of the past, then, as well as with the fostering of the nascent arts of its own time, that the State should be concerned, as instrument of the national consciousness. It would thus have a two-fold responsibility towards the artist and those who can understand him. It would be on the one hand concerned to keep alive the knowledge of past achievement as an inspiration to him, and indeed for its own sake; and on the other to do everything possible to support and encourage and make known to the community the work of contemporary creative artists in every medium. National and municipal theatres would be like libraries at which plays of all periods, and especially modern plays, would be performed, not as propaganda or instruction or (worse still) as 'classics', but as living works of art. National concert-halls, opera-houses and ballet-theatres would do the same service for music. Art-museums and picture-galleries would hold collections not of specimens of archaeological or historical interest merely, or curios, or by-gones, or collectors' rarities, but of works of art as such, treating them as the embodiment of man's inexhaustible creative vision. Set out in changing sequences and with every resource in presentation and display, they would be found to be as vivid and exciting as if they were newly made. Side by side with these works of the past, as evidence of their living character, would be contemporary work. This would be the most important of all, and no difficulty or uncertainty of assessment should stand in the way of the form of State patronage that the choice and exhibition of modern work implies. A record of past mistakes should be no deterrent, for I do not believe that such errors need be many, given a critical and well-informed direction such as I have described.

★

★

★

Such, then, is the attitude towards the arts I would propose in place of the scientific attitude, and such would be the State's responsibility for them, if my view of their value were

## Science and the Arts

adopted. It is a responsibility owed to the individual, who has accepted the State's authority in return for the liberation it may give him from the competitive struggle for material existence. To the individual as artist, the State should ensure freedom to create; to others there should be freedom to know and enjoy a supremely enlightening experience. For I would regard the arts, in their essence, not as 'the solution of problems', or as a narcotic or 'escapist' form of entertainment, or as so much factual record, or as 'a social function'—an instrument for the creation of a new order of society, giving it 'a consciousness of its nature and possibilities', but as the visionary creation of symbols, of awe-inspiring images, wholly irrational but yet as authentic as any belonging to the 'real world' of everyday life. What we call the beauty of those images, and the liberation it brings, are to me evidence that they proceed from some ultimate reality, a creative source whence proceed also those other irrational values I have mentioned in these pages. All convey a knowledge of reality more immediate than any reasoning process or analysis can give. For the language used by the original artist is made up of symbols that are fire-new, not the worn counters of common speech or the smooth abstractions of reasoned argument. The artist is a creator, and his vision and sensibility rank with those of the saint and mystic as the most precious faculties of the human mind, faculties to be cherished beyond all else.

Such a view of the matter is not unknown even among scientists. In an essay otherwise strongly critical of the Christian religion, Professor J. B. S. Haldane has written of the literature of Christianity as something which will 'come to be regarded as of mainly symbolical character, but yet as showing forth a real experience which could perhaps have been expressed in no other way at the time it was composed'. 'Religion', he writes in a remarkable passage, 'is a way of life and an attitude to the universe. It brings man into closer touch with the inner nature of reality. Statements of fact made in its name are untrue in detail, but often contain some truth at their core. Science is also a way of life and an attitude to the universe. It is concerned with everything but the nature of

## in a New Social Order

reality. Statements of fact made in its name are generally right in detail, but can only reveal the form and not the real nature of existence. The wise man regulates his conduct by the theories both of religion and science. But he regards these theories not as statements of ultimate fact, but as art forms.' This, again, is excellent as far as it goes. But what is an 'art form', unless it is a fabric of symbols? And is there not a certain simple-mindedness in a belief in 'ultimate fact?' For what finality is there in anything? Words are obviously symbols only, and arbitrary and temporary symbols, no less than the forms of logical argument and the very shapes of things around us. All is amazing, fantastic, unnecessary, if we but stop to consider it, taking nothing 'for granted'. But all is none the less part of reality, and even in that dream-like world of symbols, the poet's cadences, the musician's edifice of sound, the architect's harmony of proportions, and all the willed shapes and linear patterns that creative form-sense has imposed on wood and stone, glass and pottery, weaving and metal, all belong in spite of their fleeting and impalpable essence to what Dr. Waddington calls the 'world of stubborn reality'. They are facts, though not 'ultimate facts'. Like all existence, they belong to a world in creative flux, where the only finality is that of death, a finality of the same order as the certainty, unalterable and predictable, of a mechanism from which the informing spirit has lapsed and vanished.

★

★

★

I have been at pains to affirm these things because a definition of truth that would ignore them seems to me dangerous to the free spirit of man, which I worship. A scientific tyranny denying the reality and importance of the super-rational values would be as disastrous as a popular tyranny dictated by 'the common sense of the ordinary man'. It would stultify and destroy all that gives meaning and significance to human life. I have striven to prove that the artist does not work for our delight in meaningless fancies, but in facts; but I want a new definition of facts. Dr. Waddington has called for 'a sensitive examination of the facts . . . rational, intelligent and empir-

## Science and the Arts

ical', and I could wish for no better statement of aim. By insisting on the importance of those other mental faculties in man, beyond his mere reasoning power, I have been attempting to make the examination more sensitive and so to give it greater realism.